

Semiannual Monitoring Report
September 2011
Mesa-Biere 1-22 Well Site
Northeastern Montana

Prepared for

Pioneer Natural Resources USA, Inc.
Midland, Texas

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Table of Contents

Section	Page
1. Introduction	1
2. Background	2
2.1 Site Location	2
2.2 Site History	2
2.3 Geology	4
2.4 Groundwater Conditions	5
3. Groundwater Monitoring	5
3.1 Groundwater Level Measurements	6
3.2 Groundwater Analytical Results	7
3.2.1 Monitoring Well Network	7
3.2.2 Domestic Water Supply Wells	8
3.2.3 Recovery Well Network	9
4. Conclusions	10
References	11

List of Appendices

Appendix

- A Well Location and Groundwater Elevation Map
- B Tabulated Water Level and Water Quality Data
- B Laboratory Analytical Reports



Semiannual Monitoring Report, September 2011

Mesa-Biere 1-22 Well Site, Northeastern Montana

1. Introduction

This semiannual monitoring report is submitted by Daniel B. Stephens & Associates, Inc. (DBS&A) on behalf of Pioneer Natural Resources USA, Inc. (Pioneer) in response to and in accordance with the U.S. Environmental Protection Agency (EPA) Emergency Order on Consent (EAOC) #SWDA 08-2001-0027 and the U.S. EPA September 2011 modified sampling and analysis plan for the Mesa-Biere 1-22 well site. The Mesa-Biere well is located near the south flank of the East Poplar Oil Field in the Williston Basin and northeast of the City of Poplar, Montana, within the exterior boundaries of the Fort Peck Indian Reservation.

Since the Mesa-Biere well was successfully plugged in 2000, Pioneer has conducted numerous studies of the hydrogeology of the Mesa-Biere 1-22 well site and surrounding area beyond that required by U.S. EPA. Site investigations conducted to date include the drilling of numerous additional monitoring wells, conducting aquifer tests for the determination of aquifer properties, conducting extensive borehole and surface geophysical investigations, and the design and installation of a groundwater remediation system consisting of 11 recovery wells, 2 tank batteries, and a Class V injection well.

Over a decade of site monitoring and data collection has resulted in reduced monitoring requirements for the Mesa-Biere 1-22 well site and includes sampling of area monitoring wells, domestic wells, and brine recovery wells for total dissolved solids (TDS), chloride, and in some cases, benzene, toluene, ethylbenzene, and total xylenes (BTEX). This report outlines the results from the most recent sampling event conducted in September 2011 by DBS&A.

The monitoring event was conducted from September 16 through 23, 2011, and included sampling of 39 monitoring wells, 5 domestic wells, and 9 brine recovery wells (Appendix A). Monitoring included measurement of static water levels, measurement of on-site field parameters including electrical conductivity (EC), temperature, pH, and dissolved oxygen, and collection of groundwater samples for analysis of TDS, chloride, and BTEX. All operating



procedures for field sampling were conducted in accordance with the Mesa-Biere 1-22 well site project sampling and analysis plan and U.S. EPA-approved protocols and methods.

2. Background

This section provides an overview of the site location, history, and geology and hydrogeology.

2.1 Site Location

The Mesa-Biere 1-22 well monitoring network is centralized in the south flank of the East Poplar Oil Field in Roosevelt County, northeast of Poplar, Montana. The monitoring network extends from the Mesa-Biere 1-22 well site location in the southwest quarter of Section 22, Township 28 North, Range 51 East, to include wells in Sections 15, 16, 21, 27, 28, and 29, Township 28N, Range 51 East (Appendix A). The monitoring network extends across ancestral terraces that slope west to the present day Poplar River Valley, located approximately 2 miles west of the Mesa-Biere 1-22 well location.

The topography of this area generally consists of a broad glacial bench with low relief, dissected by the Poplar River and its tributaries. Current land surfaces represent the effects of glaciation during the Pleistocene as well as erosional effects of the Poplar River and Missouri River to the west and south of the project area, respectively (Appendix A).

The natural soil surface surrounding the Mesa-Biere 1-22 well site is Dooley sandy loam, a well-drained calcium carbonate soil, having slow runoff with moderately slow or slow permeability (Montana SSURGO soils database, NRCS [2011]). The soil is fine textured and nonhydric with low organic composition. Corrosion potential for uncoated steel is high. The soils have somewhat limited water holding capacity and depth to water table is more than 6 feet.

2.2 Site History

The Mesa-Biere 1-22 production well was drilled and completed by Mesa Petroleum (Mesa) on June 8, 1970. The production well was operated by Mesa for a total of 10 years, from 1970 to 1972 and from 1976 to 1984. In 1986, the Mesa-Biere 1-22 production well was plugged and



abandoned by Mesa due to a casing leak. In June 1985, within 9 months of plugging the production well, fluid flowed to the surface at the Mesa-Biere 1-22 well site. In response, Mesa drilled a relief well to the north-northeast of the Mesa-Biere 1-22 well site and injected additional cement into the formation, which appeared to successfully stop the flow of water. In 1997 Mesa merged with Parker & Parsley Petroleum, forming Pioneer.

In 1999, a number of the area residents and the U.S. EPA filed suit against four of the companies with holdings in the East Poplar Unit: Murphy Oil and Gas, Samson Hydrocarbon, Marathon Oil, and Pioneer. The respondents joined in an EAOB with U.S. EPA (#SDWA 8-99-68, which was later replaced with the final and current #SWDA 08-2004-0035) with the conditions that the companies conduct a public water supply threat study and construct a public water system to provide the affected landowners with municipal water from the City of Poplar.

As per the original EAOB, in May 2000 Pioneer installed 8 monitoring wells in the immediate vicinity of the Mesa-Biere 1-22 well site for further investigation. Analytical and field results from the initial round of sampling, which included 2 existing monitoring wells and 4 domestic wells, indicated that the Mesa-Biere 1-22 well was an ongoing source of groundwater contamination. It was determined that oil-field produced water along with some associated crude oil was channeling upward into the shallow drinking water aquifer (Jacobs et al., 2008). In a separate U.S. EPA EAOB (#SWDA 08-2001-0027), Pioneer was required to plug the Mesa-Biere 1-22 well and conduct further monitoring.

In July 2001 with the approval of U.S. EPA, Pioneer drilled 3 injection wells to the Judith River Formation and re-entered the old relief well. The 4 wells were then used to pump Halliburton's Injectrol product to seal off the brine leak from the Mesa-Biere 1-22 well. Over the past 11 years since the successful re-entry and plugging of the Mesa-Biere 1-22 well, Pioneer has worked diligently to characterize, delineate, and monitor the resultant contaminant plume, consistently exceeding the requirements set forth in the EAOB. These data, in addition to the detailed geological and hydrogeological studies, have allowed Pioneer to accurately delineate the extent of contamination associated with the Mesa-Biere well. In addition, Pioneer has used these data and studies to voluntarily design, construct, operate, and monitor a remediation system for the Mesa-Biere groundwater plume.



Pioneer's Mesa-Biere 1-22 well aquifer remediation system officially became operational in August 2008. The system includes 11 groundwater extraction wells, 2 tank batteries, and a 7,800-foot-deep Class V, U.S. EPA-permitted injection well (PNR SWD-1). The SWD-1 well is capable of disposing of 10,000 barrels per day (bbl/d) of contaminated groundwater into the Mississippian, Mission Canyon, and Devonian Nisku Formations, which are far below and not hydraulically connected to the near surface shallow aquifers at the Mesa-Biere 1-22 well site. To date, the remediation system has removed over 176 million gallons (4,194,580 bbls) of brine-contaminated groundwater. The system is currently removing brine-contaminated groundwater at a rate of approximately 199,080 gallons (4,740 bbls) per day from the aquifer. Pioneer continues to monitor system performance through an extensive monitoring network and geophysical surveys to maximize system effectiveness.

2.3 Geology

The Mesa-Biere 1-22 well site is located near the western boundary of the Williston Basin, in close proximity to the center of the Poplar Anticline (an estimated 10 miles north of the City of Poplar), which trends northwest and is approximately 30 miles long and 25 miles wide (Hamke, 1966). Surface geology of the area is composed of thick Pleistocene glacial deposits found atop the benches. These glacial deposits average approximately 100 feet in thickness and are composed of sands, gravels, and silts. The glacial deposits are replaced and overlain in the alluvial valleys by more recent Holocene alluvium, composed of fine- to coarse-grained floodplain deposits of the Missouri River and its major tributaries, such as the Poplar River directly west of the site (Colton, 1963). Holocene alluvial deposits are predominately silty in nature with local gravel lenses. This unit can also include colluvial and lacustrine deposits, as well as remnants of glacial outwash.

The Holocene and Quaternary sediments are underlain by the Upper Cretaceous Bearpaw Shale, a relatively thick and essentially impervious formation ranging from 700 to 1,000 feet in thickness (Thamke and Craig, 1997). The Bearpaw Shale is comprised primarily of marine shale and claystone with thin beds of bentonite clays, and slopes generally to the west.



2.4 Groundwater Conditions

The water-bearing Quaternary-age sand and gravel deposits are the sole developed source of groundwater for area residents. Water within these deposits generally occurs under unconfined conditions, although due to the heterogeneous nature of sediments in the area confined and semiconfined conditions occur as well.

Depth to water in this area can range from 7 to 130 feet in the glacial deposits and from 5 to 44 feet in the alluvium (Thamke et al., 1996). The Mesa-Biere 1-22 well site is located on the Biere upper terrace, an ancestral bench of the Poplar River. The Biere terrace is underlain by Quaternary deposits of varying thickness. Domestic and monitoring wells in the area indicate an average depth to the upper Wiota aquifer of approximately 41 feet below ground surface (bgs), and a depth to the Bearpaw Shale of 62 feet bgs. The Wiota aquifer is no longer used as a domestic water supply source in the vicinity of the Mesa-Biere 1-22 well site.

The Judith River aquifer occurs beneath the Bearpaw Shale. However, through a combination of natural conditions and injection of production waters into this sandstone aquifer, the water quality is unsuitable for drinking water purposes.

Regional groundwater flow is primarily west toward the Poplar River Valley, and then south along the Poplar River alluvium toward the Missouri River Valley. Local variations in the regional groundwater flow path have been identified within the study area, and appear to be induced by areas of low hydraulic conductivity that limit flow to the west (HKM, 2007; DBS&A, 2007; SSP&A, 2008).

3. Groundwater Monitoring

The September 2011 monitoring event for the Mesa-Biere 1-22 well site was conducted from September 16 through September 23, 2011, and consisted of the following tasks:

- Measurement of static water levels for 39 monitoring wells and 5 domestic wells



- Monitoring of on-site field parameters, including EC, temperature, pH, and dissolved oxygen
- Collection of groundwater samples from 39 monitoring wells, 5 domestic wells, and 9 recovery wells for analysis of TDS, chloride, and BTEX

All operating procedures for field sampling were conducted in accordance with the Mesa-Biere 1-22 well project sampling and analysis plan and U.S. EPA-approved protocols and methods.

To ensure representative groundwater sampling, monitoring and domestic wells were purged using a portable submersible pump until at least three casing volumes of water were removed and field parameters (EC, temperature, pH, and dissolved oxygen) had stabilized. Field parameters were measured in a flow-through cell for all monitoring and domestic wells and in a clean sample container for recovery wells. Once field parameters had stabilized, samples were collected and were preserved and stored as directed by the analytical laboratory. Following sample collection, sample equipment decontamination protocols were implemented using low-phosphate detergent, rinse water, and deionized water to prevent cross-contamination between sample sites. The brine recovery wells operate nearly continuously with dedicated pumps, requiring minimal additional purging prior to sample collection. Quality control samples comprised approximately 10 percent of the total set submitted for laboratory analysis. Calculated differences between field duplicate groundwater samples did not exceed 10 percent.

Tabulated water level elevations and depth to fluid data, water quality parameter readings, inorganic and organic water chemistry results, and brine recovery well sampling results are provided in Appendix B. Appendix C provides complete laboratory reports, including chain of custody information, laboratory analytical reports, and laboratory quality assurance and quality control data.

3.1 Groundwater Level Measurements

Wells were gauged using an electronic interface probe capable of detecting water and light nonaqueous-phase liquid (LNAPL) with a precision of 0.01 foot. Project personnel recorded



static water levels on September 16 and 17, 2011, prior to sampling (Table B-1). Measureable product was detected in 4 of the monitoring wells: PNR-17, PNR-24, PNR-25, and PNR-26 (Table B-1).

Water levels measured throughout the monitoring network during the September 2011 sampling event ranged from 1,855.45 feet above mean sea level (feet msl) at MOC-20B to 2,105.69 feet msl at PNR-6. The static water levels averaged 2020.43 feet msl and a depth of 46.73 feet bgs. This is an average rise in the water table of over 4 feet compared to September 2010. September 2011 static water levels indicate a localized flow direction on-site to the south and southwest with a calculated hydraulic gradient ranging from 0.0026 to 0.0031 foot per foot (ft/ft) on the Biere upper terrace and from 0.011 to 0.017 ft/ft in the lower Poplar River Valley alluvium (Appendix A).

3.2 Groundwater Analytical Results

Groundwater samples were collected from each of the 39 monitoring wells, 5 domestic wells, and 9 recovery wells and analyzed for TDS and chlorides two primary established contamination indicator parameters, as well as for BTEX according to the modified U.S. EPA sampling agreement. Laboratory analytical results are summarized in Tables B-2 through B-4. Complete laboratory analytical reports are provided as Appendix C.

3.2.1 Monitoring Well Network

The Pioneer monitoring network includes a baseline of 37 wells. The casing for well PNR-15 was damaged prior to the sampling event; consequently, field personnel were unable to obtain a sample. Well PNR-15 has been dropped from the sampling network. In addition to the wells required by the EAOC, at Pioneer's request and with the permission of the Fort Peck Tribes Office of Environmental Protection, field personnel collected groundwater samples at 6 additional USGS monitoring wells (USGS06-7, USGS06-11, USGS09-2, USGS09-3, USGS09-6, and USGS93-5), as shown in Tables B-1 and B-2.

Wells PNR-5, PNR-14, and PNR-23 are the closest wells within the monitoring network to the Mesa-Biere 1-22 well. TDS concentrations in these wells have decreased by an average of 24 percent since September 2010 and by 67 percent since activation of the remediation system.



Chloride concentrations in these wells have decreased by an average of 31 percent since September 2010 and by 75 percent since activation of the remediation system.

A total of 7 wells (PNR-7, PNR-8, PNR-16, PNR-19, PNR-34-07, PNR-35-07, and PNR-39-08) within the monitoring network define the westernmost extent and boundary of the brine plume associated with the Mesa-Biere 1-22 well through the 250 milligrams per liter (mg/L) concentration, which is the secondary maximum contaminant level (SMCL) set forth by U.S. EPA. The majority of these wells indicate a decrease in chloride and TDS concentrations since last year, on average 28 percent and 24 percent, respectively. The monitoring wells also exhibit a decrease in chloride and TDS concentrations since activation of the remediation system of 29 percent and 21 percent, respectively. These results indicate that the remediation wells are actively limiting the contaminant movement to the west. Exceptions to this overall trend are evident at wells PNR-8 and PNR-35-07, both of which have exhibited increasing chloride and TDS concentrations (Appendix B).

Five monitoring wells (PNR-39-08, PNR-29, PNR-28, PNR-27, and PNR-33-06) are used to delineate the southernmost edge of the brine plume. Average chloride concentrations in these wells have decreased by 19 percent since last year and by 27 percent since activation of the remediation system. TDS concentrations in these wells showed no significant change. These values provide additional evidence that the plume is being effectively contained to the south.

3.2.2 Domestic Water Supply Wells

In accordance with the modified monitoring agreement, 4 domestic wells were sampled (M-27, M-28, M-31, and M-60). These wells have been abandoned and are no longer used for domestic water supply uses. Wells M-28 and M-31 are immediately downgradient of the Mesa-Biere 1-22 well location and are completed in the Biere upper terrace. Well M-28 is the closest domestic well to the contaminant source (the Mesa-Biere 1-22 well) and shows marked improvement in water quality, with a chloride concentration of 1,610 mg/L. This value represents a 100 percent decrease from the peak measured concentration and a 79 percent decrease since activation of the remediation system. M-31, located just south and slightly west of M-28, also shows improvement since activation of the remediation system, with a decrease in chloride concentration of 15 percent. Due to subsurface plume migration, well M-31 now



appears to be near the center of the contaminant plume and consequently has the highest chloride concentration of any of the domestic wells sampled (34,500 mg/L).

Well M-27, upgradient from the Mesa-Biere 1-22 well site, exhibited no significant change in chloride concentration since activation of the remediation system. The chloride concentration in this well is still increasing from the original value of 5,280 mg/L to 6,250 mg/L in September 2011.

Well M-60, located to the southwest of the Mesa-Biere 1-22 well site in the lower Poplar River alluvial valley, shows a significant increase in chloride concentration of 25 percent since activation of the remediation system. The chloride concentration in this well has more than doubled since monitoring began at this site in May 2000.

At Pioneer's request, in addition to the wells required by the EAO, field personnel sampled M-18, located just over 1 mile to the north and west, upgradient from the Mesa-Biere 1-22 well. M-18 exhibited a chloride concentration of 5,210 mg/L and a TDS concentration of 9,710 mg/L. The chloride concentration decreased slightly from the September 2010 value of 5,410 mg/L. However, the chloride concentration showed no significant change from the value of 5,190 mg/L that was recorded at M-18 in November 2001, a value almost 94 times greater than the area's background chloride concentrations (Jacobs et al., 2008).

Benzene was detected in only one well, M-31, at a concentration of 26 micrograms per liter ($\mu\text{g/L}$). No toluene, ethylbenzene, or total xylenes were detected in any of the domestic wells sampled.

3.2.3 Recovery Well Network

The Pioneer recovery well network comprises 11 recovery wells (PNR-RW-1, -2, -3, -4, -5, -6, -8, -9, -10, -11, and -12), as shown in Appendix A. Recovery wells PNR-RW-9, -10, and -11 are located near the Northern Tank Battery closest to the Mesa-Biere 1-22 well site. Wells PNR-RW-1, -2, -3, -4, and -5 are located just north of the Southern Tank Battery nearest the Class V Injection Well (SWD-1). The westernmost recovery wells are PNR-RW-6, -8, and -12.



In the recovery wells nearest the Mesa-Biere 1-22 well site (and Northern Tank Battery), the average chloride concentration was 13,875 mg/L, a 26 percent decrease compared to last year. The recovery wells closest to injection well SWD-1 and the Southern Tank Battery exhibited an average September 2011 chloride concentration of 15,024 mg/L, and showed no significant difference from the previous year. In the westernmost recovery wells, the average chloride concentration was 13,233 mg/L, a 34 percent decrease compared to last year.

4. Conclusions

The results of the semiannual sampling conducted in September 2011 in accordance with EAOC #SWDA 08-2001-0027 and the U.S. EPA September 2011 modified sampling and analysis plan for the Mesa-Biere 1-22 well site provide evidence for the following conclusions:

- Subsurface conditions surrounding the Mesa-Biere 1-22 well site are characterized by the heterogeneous nature of the site geology. Depth to groundwater for September 2011 averaged approximately 46.73 feet bgs, an uncharacteristically low value for depth to water (indicating a rise in the water table) relative to previous years of record.
- Groundwater flow in the vicinity of the Mesa-Biere 1-22 well site is to the south-southwest with a calculated hydraulic gradient ranging from 0.0026 to 0.0031 ft/ft on the Biere upper terrace and from 0.011 to 0.017 ft/ft in the lower Poplar River Valley alluvium.
- Benzene concentrations (where encountered) continue to show a decreasing trend throughout the monitoring network.
- Chloride concentrations in monitoring wells closest to the Mesa-Biere 1-22 well site have decreased by an average of 67 percent since system activation.
- Measured chloride concentrations for most of the wells used to define the western and southern boundaries of the plume decreased by an average of 28 percent relative to September 2010. The two exceptions to this trend are wells PNR-8 and PNR-35-07,



located on the west central plume boundary, both of which indicated slight increases in chloride concentration. Trends at these wells will be monitored closely during future sampling events.

- Current monitoring data indicate that the remediation system has effectively limited plume migration to the south since activation of the system in August 2008.

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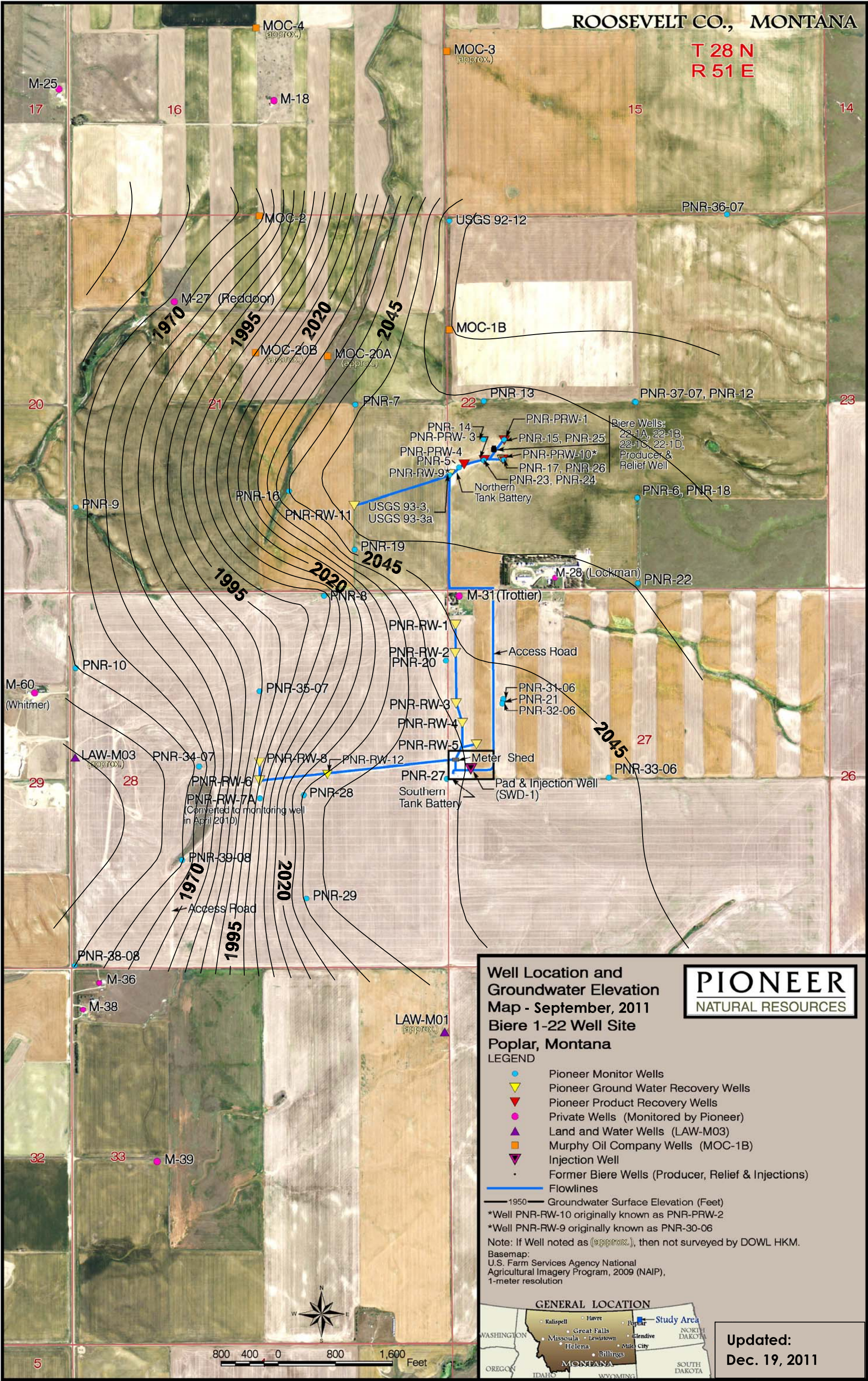
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Appendix A

Well Location and Groundwater Elevation Map



Appendix B

Tabulated Water Level and Water Quality Data

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
LAW-M01	2091.17	2093.01	12/5/2006		57.63		2035.38
			10/2/2007		58.00		2035.01
			4/14/2009		58.32		2034.69
LAW-M03	1986.45	1988.90	12/15/2006		31.47		1957.43
			3/13/2007		39.99		1948.91
			10/2/2007		31.76		1957.14
			3/25/2008		31.38		1957.52
			10/22/2008		32.10		1956.80
			4/14/2009		29.82		1959.08
			4/8/2010		31.00		1957.90
			9/15/2010		31.61		1957.29
			5/3/2011		28.15		1960.75
			7/7/2011		26.48		1962.42
LAW-M04		1976.85	12/15/2006		23.14		1953.71
LAW-M05		2048.90	12/15/2006		98.58		1950.32
			4/19/2009		97.54		1951.36
LAW-M06		2023.68	12/15/2006		76.18		1947.50
LAW-M08		2010.58	12/15/2006		62.40		1948.18
M-10			4/16/2009		9.15		
M-18	2047.10	2048.13	11/6/2001		80.80		1967.33
			2/19/2002		80.25		1967.88
			5/20/2002		80.60		1967.53
			8/19/2002		80.60		1967.53
			3/5/2003		79.60		1968.53
			5/12/2003		79.00		1969.13
			8/12/2003		80.46		1967.67
			3/18/2004		80.47		1967.66
			6/13/2004		80.30		1967.83
			3/2/2005		80.70		1967.43
			8/18/2005		80.60		1967.53
			8/22/2006		80.76		1967.37

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Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
M-18 (cont.)	2047.10	2048.13	12/5/2006		80.57		1967.56
			12/2/2007		80.86		1967.27
			4/14/2009		78.72		1969.41
			9/30/2009		80.37		1967.76
			4/8/2010		80.06		1968.07
			9/15/2010		80.71		1967.42
			5/3/2011		77.17		1970.96
M-25	2031.70	2033.33	11/9/2001		67.30		1966.03
M-27	2029.92	2031.19	8/13/2001		67.15		1964.04
			9/5/2001		67.28		1963.91
			11/6/2001		67.61		1963.58
			2/19/2002		67.07		1964.12
			5/20/2002		67.04		1964.15
			8/19/2002		67.74		1963.45
			11/4/2002		67.70		1963.49
			3/5/2003		68.88		1962.31
			5/12/2003		66.60		1964.59
			8/12/2003		67.30		1963.89
			11/9/2003		68.00		1963.19
			3/18/2004		67.39		1963.80
			6/7/2004		66.05		1965.14
			9/13/2004		67.12		1964.07
			11/18/2004		67.42		1963.77
			3/1/2005		67.19		1964.00
			5/24/2005		67.24		1963.95
			8/16/2005		67.50		1963.69
			11/15/2005		67.66		1963.53
			2/7/2006		67.42		1963.77
			5/23/2006		66.88		1964.31
			8/22/2006		67.81		1963.38
			12/5/2006		67.66		1963.53
			3/12/2007		67.29		1963.90
			10/2/2007		67.80		1963.39
			3/25/2008		67.56		1963.63
			10/22/2008		67.97		1963.22
			4/14/2009		66.03		1965.16
			9/30/2009		67.48		1963.71
			4/8/2010		67.14		1964.05
			9/15/2010		67.55		1963.64
			5/3/2011		64.12		1967.07

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
M-27 (cont.)	2029.92	2031.19	9/17/2011		65.28		1965.91
M-28	2102.82	2096.63	5/31/2001		49.23		2047.40
			8/13/2001		48.85		2047.78
			9/5/2001		48.61		2048.02
			11/6/2001		49.06		2047.57
			2/19/2002		49.00		2047.63
			5/20/2002		49.10		2047.53
			8/19/2002		49.62		2047.01
			11/6/2002		49.73		2046.90
			3/5/2003		49.39		2047.24
			5/12/2003		50.50		2046.13
			8/12/2003		49.92		2046.71
			11/5/2003		50.28		2046.35
			3/16/2004		50.01		2046.62
			6/7/2004		50.04		2046.59
			9/15/2004		49.85		2046.78
			11/19/2004		49.73		2046.90
			3/1/2005		49.78		2046.85
			5/24/2005		50.31		2046.32
			8/16/2005		50.11		2046.52
			11/15/2005		50.66		2045.97
			2/7/2006		50.58		2046.05
			5/23/2006		49.88		2046.75
			8/22/2006		50.28		2046.35
			12/5/2006		50.33		2046.30
			3/12/2007		50.25		2046.38
			10/2/2007		50.10		2046.53
			3/25/2008		50.45		2046.18
			10/22/2008		51.13		2045.50
			4/14/2009		50.95		2045.68
			9/30/2009		50.90		2045.73
			4/8/2010		51.52		2045.11
			9/15/2010		52.10		2044.53
			5/3/2011		51.54		2045.09
			9/17/2011		47.49		2049.14

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
M-31	2085.00	2087.17	5/31/2001		40.37		2046.80
			8/13/2001		40.26		2046.91
			9/5/2001		40.15		2047.02
			11/6/2001		40.33		2046.84
			2/19/2002		40.42		2046.75
			5/20/2002		40.77		2046.40
			8/19/2002		41.22		2045.95
			11/4/2002		41.18		2045.99
			3/5/2003		41.30		2045.87
			5/12/2003		40.87		2046.30
			8/12/2003		41.62		2045.55
			11/5/2003		41.86		2045.31
			3/16/2004		41.65		2045.52
			6/7/2004		41.85		2045.32
			9/13/2004		41.65		2045.52
			11/18/2004		41.52		2045.65
			3/1/2005		41.65		2045.52
			5/24/2005		41.91		2045.26
			8/16/2005		41.07		2046.10
			11/15/2005		41.27		2045.90
			2/7/2006		41.34		2045.83
			5/23/2006		41.20		2045.97
			8/22/2006		41.36		2045.81
			12/5/2006		41.71		2045.46
			3/12/2007		41.80		2045.37
			10/2/2007		41.82		2045.35
			3/25/2008		42.05		2045.12
			10/22/2008		42.81		2044.36
			4/14/2009		43.15		2044.02
			9/30/2009		43.85		2043.32
			4/8/2010		44.55		2042.62
			9/15/2010		44.87		2042.30
			5/3/2011		43.91		2043.26
			9/17/2011		39.91		2047.26
M-39	2049.10	2050.63	11/6/2001		100.68		1949.95
			12/5/2006		100.60		1950.03
M-41			12/5/2006		42.24		
M-69			4/14/2009		3.80		

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
M-80			4/18/2009		16.31		
MOC- 1B	2077.05	2079.51	11/6/2001		28.25		2051.26
			11/4/2002		28.66		2050.85
			6/7/2004		28.48		2051.03
			12/5/2006		30.40		2049.11
			3/12/2007		30.41		2049.10
			10/2/2007		28.58		2050.93
			3/25/2008		30.29		2049.22
			10/22/2008		31.04		2048.47
			4/14/2009		30.15		2049.36
			9/30/2009		31.01		2048.50
			4/8/2010		30.68		2048.83
			9/15/2010		27.79		2051.72
			5/3/2011		23.13		2056.38
			9/17/2011		19.48		2060.03
MOC- 2	2036.10	2038.91	11/9/2001		73.50		1965.41
			12/5/2006		73.60		1965.31
			3/12/2007		73.01		1965.90
			10/2/2007		73.80		1965.11
			3/25/2008		73.50		1965.41
			10/22/2008		74.12		1964.79
			4/14/2009		71.76		1967.15
			9/30/2009		73.27		1965.64
			4/8/2010		73.03		1965.88
			9/15/2010		73.66		1965.25
			5/3/2011		70.13		1968.78
			9/17/2011		71.71		1967.20
MOC- 3		2010.56	12/5/2006		53.01		1957.55
			3/12/2007		53.93		1956.63
			10/2/2007		52.46		1958.10
			3/25/2008		52.93		1957.63
			10/22/2008		53.52		1957.04
			4/14/2009		52.50		1958.06
			9/30/2009		52.00		1958.56
			4/8/2010		52.74		1957.82
			9/15/2010		51.17		1959.39
			5/3/2011		49.03		1961.53
			9/17/2011		47.45		1963.11

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
MOC- 4		1966.63	12/5/2006		76.15		1890.48
			3/13/2007		75.62		1891.01
			10/2/2007		74.92		1891.71
			3/25/2008		74.57		1892.06
			10/22/2008		75.12		1891.51
			4/14/2009		72.64		1893.99
			9/30/2009		74.40		1892.23
			4/8/2010		74.03		1892.60
			9/15/2010		74.69		1891.94
			5/3/2011		71.13		1895.50
			9/17/2011		73.70		1892.93
MOC- 5		2055.86	12/5/2006		17.74		2038.12
			10/2/2007		15.66		2040.20
MOC- 7		2051.96	12/5/2006		34.74		2017.22
			10/2/2007		33.16		2018.80
MOC- 8		1969.92	12/5/2006		75.17		1894.75
			10/2/2007		75.37		1894.55
MOC- 9		2051.83	12/5/2006		27.45		2024.38
			10/2/2007		25.92		2025.91
MOC-10		2052.66	12/5/2006		31.54		2021.12
			10/2/2007		30.38		2022.28
MOC-11		1974.04	12/5/2006		76.20		1897.84
			10/2/2007		74.87		1899.17
MOC-12		2053.25	12/5/2006		55.39		1997.86
			10/2/2007		54.25		1999.00
MOC-13			12/5/2006		35.59		
			10/2/2007		35.48		
MOC-14		2052.26	12/5/2006		35.13		2017.13
			10/2/2007		33.95		2018.31
MOC-16		2049.02	12/5/2006		30.40		2018.62
			10/2/2007		29.54		2019.48

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
MOC-17		2063.19	12/5/2006		31.92		2031.27
			10/2/2007		31.82		2031.37
MOC-18		2055.13	12/5/2006		33.03		2022.10
			10/2/2007		32.89		2022.24
MOC-19		1971.24	12/5/2006		75.29		1895.95
			10/2/2007		75.48		1895.76
MOC-20A		1991.89	12/5/2006		17.73		1974.16
			3/12/2007		19.66		1972.23
			10/2/2007		16.16		1975.73
			3/25/2008		16.66		1975.23
			10/22/2008		17.68		1974.21
			4/14/2009		18.45		1973.44
			9/30/2009		16.64		1975.25
			4/8/2010		17.24		1974.65
			9/15/2010		16.68		1975.21
			5/3/2011		11.77		1980.12
			9/17/2011		11.11		1980.78
MOC-20B		1926.46	12/5/2006		73.18		1853.28
			3/12/2007		72.60		1853.86
			10/2/2007		73.37		1853.09
			3/25/2008		73.07		1853.39
			10/22/2008		73.76		1852.70
			4/14/2009		71.47		1854.99
			9/30/2009		72.77		1853.69
			4/8/2010		72.67		1853.79
MOC-20B (cont.)		1926.46	9/15/2010		73.25		1853.21
			5/3/2011		69.72		1856.74
			9/17/2011		71.01		1855.45
MOC-23		2042.56	12/5/2006		25.78		2016.78
			12/2/2007		25.40		2017.16
PNR- 4	2080.86	2084.21	8/13/2001	27.38	56.31	28.93	2048.15
			9/4/2001	27.08	69.88	42.80	2044.28
			11/6/2001	29.01	69.88	40.87	2042.93
PNR- 5	2082.64	2085.56	5/31/2000		37.17		2048.39
			8/13/2001		37.04		2048.52

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR- 5 (cont.)	2082.64	2085.56	9/5/2001		36.99		2048.57
			11/6/2001		37.05		2048.51
			2/19/2002		37.22		2048.34
			5/20/2002		38.25		2047.31
			8/19/2002		38.76		2046.80
			11/4/2002		38.81		2046.75
			3/5/2003		38.70		2046.86
			5/12/2003		38.53		2047.03
			8/12/2003		39.15		2046.41
			11/4/2003		39.39		2046.17
			3/16/2004		39.58		2045.98
			6/7/2004		39.54		2046.02
			9/13/2004		39.18		2046.38
			11/17/2004		39.27		2046.29
			3/2/2005		39.50		2046.06
			5/25/2005		39.53		2046.03
			8/17/2005		39.35		2046.21
			11/16/2005		39.24		2046.32
			2/9/2006		39.67		2045.89
			5/25/2006		39.67		2045.89
			8/22/2006		39.78		2045.78
			12/5/2006		39.91		2045.65
			3/12/2007		39.83		2045.73
			10/2/2007		39.47		2046.09
			10/22/2008		40.17		2045.39
			4/14/2009		40.27		2045.29
			9/30/2009		39.95		2045.61
			4/8/2010		40.82		2044.74
			9/15/2010		41.42		2044.14
			5/3/2011		40.37		2045.19
			9/17/2011		34.97		2050.59
PNR- 6	2116.53	2119.07	5/31/2000		20.33		2098.74
			8/13/2001		20.55		2098.52
			9/5/2001		20.51		2098.56
			11/6/2001		21.02		2098.05
			2/19/2002		21.39		2097.68
			5/20/2002		21.65		2097.42
			8/19/2002		21.06		2098.01
			11/4/2002		21.23		2097.84
			3/4/2003		20.50		2098.57
			5/12/2003		22.12		2096.95

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR- 6 (cont.)	2116.53	2119.07	8/12/2003		21.04		2098.03
			11/4/2003		21.60		2097.47
			3/16/2004		22.16		2096.91
			6/7/2004		20.32		2098.75
			9/13/2004		20.05		2099.02
			11/17/2004		20.78		2098.29
			2/28/2005		21.55		2097.52
			5/23/2005		21.88		2097.19
			8/16/2005		21.93		2097.14
			11/15/2005		22.47		2096.60
			2/7/2006		22.66		2096.41
			5/23/2006		22.35		2096.72
			8/22/2006		21.61		2097.46
			12/5/2006		20.96		2098.11
			3/12/2007		21.13		2097.94
			10/2/2007		19.24		2099.83
			3/25/2008		21.18		2097.89
			10/22/2008		19.81		2099.26
			4/14/2009		19.48		2099.59
			9/30/2009		17.91		2101.16
			4/8/2010		20.22		2098.85
			9/15/2010		14.15		2104.92
			5/3/2011		12.47		2106.60
			9/17/2011		13.38		2105.69
PNR- 7	2069.59	2072.22	5/31/2000		25.50		2046.72
			8/13/2001		25.19		2047.03
			9/5/2001		25.08		2047.14
			11/6/2001		25.47		2046.75
			2/19/2002		25.72		2046.50
			5/20/2002		26.20		2046.02
			8/19/2002		26.17		2046.05
			11/4/2002		26.54		2045.68
			3/4/2003		27.50		2044.72
			5/12/2003		27.39		2044.83
			8/12/2003		27.05		2045.17
			11/4/2003		27.40		2044.82
			3/16/2004		27.55		2044.67
			6/7/2004		27.32		2044.90
			9/13/2004		26.98		2045.24
			11/17/2004		27.35		2044.87
			3/1/2005		27.15		2045.07

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR- 7 (cont.)	2069.59	2072.22	5/23/2005		27.90		2044.32
			8/17/2005		27.28		2044.94
			11/16/2005		27.78		2044.44
			2/9/2006		27.88		2044.34
			5/24/2006		28.09		2044.13
			8/22/2006		28.02		2044.20
			12/5/2006		27.92		2044.30
			3/12/2007		27.97		2044.25
			10/4/2007		28.07		2044.15
			3/25/2008		28.12		2044.10
			10/22/2008		28.87		2043.35
			4/14/2009		28.51		2043.71
			9/30/2009		28.07		2044.15
			4/8/2010		29.43		2042.79
			9/15/2010		29.72		2042.50
			5/3/2011		28.34		2043.88
			9/18/2011		23.29		2048.93
PNR- 8	2060.21	2062.99	5/31/2000		63.64		1999.35
			8/13/2001		63.53		1999.46
			9/5/2001		63.84		1999.15
			11/6/2001		64.54		1998.45
			2/19/2002		64.21		1998.78
			5/20/2002		64.40		1998.59
			8/19/2002		64.61		1998.38
			11/4/2002		64.56		1998.43
			3/4/2003		64.00		1998.99
			5/12/2003		64.84		1998.15
			8/12/2003		64.94		1998.05
			11/4/2003		68.50		1994.49
			3/16/2004		65.41		1997.58
			6/7/2004		64.98		1998.01
			9/13/2004		65.16		1997.83
			11/16/2004		65.61		1997.38
			3/2/2005		65.64		1997.35
			5/26/2005		65.94		1997.05
			8/18/2005		65.75		1997.24
			11/17/2005		66.26		1996.73
			2/9/2006		66.09		1996.90
			5/24/2006		65.77		1997.22
			8/22/2006		66.11		1996.88
			12/5/2006		66.09		1996.90

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR- 8 (cont.)	2060.21	2062.99	3/12/2007		66.13		1996.86
			10/2/2007		66.41		1996.58
			3/25/2008		66.32		1996.67
			10/22/2008		66.91		1996.08
			4/14/2009		66.04		1996.95
			9/30/2009		65.97		1997.02
			4/8/2010		66.16		1996.83
			9/15/2010		66.25		1996.74
			5/3/2011		65.09		1997.90
			9/17/2011		61.92		2001.07
PNR- 9	2014.11	2017.26	5/31/2000		56.46		1960.80
			8/13/2001		57.29		1959.97
			9/5/2001		57.28		1959.98
			11/6/2001		57.61		1959.65
			2/19/2002		57.12		1960.14
			5/20/2002		57.08		1960.18
			8/19/2002		57.90		1959.36
			11/4/2002		57.29		1959.97
			3/4/2003		57.11		1960.15
			5/12/2003		56.47		1960.79
			8/12/2003		57.33		1959.93
			11/4/2003		57.40		1959.86
			3/18/2004		57.31		1959.95
			6/7/2004		56.04		1961.22
			9/13/2004		57.12		1960.14
			11/16/2004		57.26		1960.00
			3/1/2005		57.12		1960.14
			5/24/2005		57.19		1960.07
			8/16/2005		57.38		1959.88
			11/15/2005		57.74		1959.52
			2/9/2006		57.24		1960.02
			5/23/2006		56.69		1960.57
			8/22/2006		57.67		1959.59
			12/5/2006		57.39		1959.87
			3/12/2007		59.96		1957.30
			10/2/2007		57.73		1959.53
			3/25/2008		57.35		1959.91
			10/22/2008		58.00		1959.26
			4/14/2009		55.68		1961.58
			9/30/2009		57.21		1960.05
			4/8/2010		56.95		1960.31

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR- 9 (cont.)	2014.11	2017.26	9/15/2010		57.56		1959.70
			5/3/2011		54.02		1963.24
			7/7/2011		53.07		1964.19
			9/17/2011		55.29		1961.97
PNR-10	2009.17	2011.69	5/31/2000		53.93		1957.76
			8/13/2001		53.93		1957.76
			9/5/2001		54.03		1957.66
			11/6/2001		54.37		1957.32
			2/19/2002		53.88		1957.81
			5/20/2002		53.79		1957.90
			8/19/2002		54.27		1957.42
			11/4/2002		54.04		1957.65
			3/4/2003		53.84		1957.85
			5/12/2003		53.17		1958.52
			8/12/2003		54.11		1957.58
			11/4/2003		54.30		1957.39
			3/18/2004		53.99		1957.70
			6/7/2004		52.74		1958.95
			9/13/2004		53.85		1957.84
			11/16/2004		53.99		1957.70
			3/1/2005		53.80		1957.89
			5/24/2005		53.94		1957.75
			8/16/2005		54.11		1957.58
			11/15/2005		54.48		1957.21
			2/7/2006		54.03		1957.66
			5/23/2006		53.38		1958.31
			8/22/2006		54.42		1957.27
			12/5/2006		54.11		1957.58
			3/12/2007		53.55		1958.14
			10/2/2007		54.41		1957.28
			3/25/2008		54.03		1957.66
			10/22/2008		54.73		1956.96
			4/14/2009		52.42		1959.27
			9/30/2009		53.91		1957.78
			4/8/2010		53.65		1958.04
			9/15/2010		54.25		1957.44
			5/3/2011		50.76		1960.93
			7/7/2011		49.55		1962.14
			9/17/2011		51.71		1959.98

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-12	2098.44	2101.23	5/31/2000		51.10		2050.13
			8/13/2001		49.90		2051.33
			9/5/2001		49.67		2051.56
			11/6/2001		50.52		2050.71
			2/19/2002		50.80		2050.43
			5/20/2002		51.40		2049.83
			8/19/2002		51.20		2050.03
			11/4/2002		50.86		2050.37
			3/4/2003		51.79		2049.44
			5/12/2003		51.95		2049.28
			8/12/2003		50.80		2050.43
			11/4/2003		54.10		2047.13
			3/16/2004		51.75		2049.48
			6/7/2004		51.01		2050.22
			9/13/2004		50.51		2050.72
			11/16/2004		51.05		2050.18
			2/28/2005		51.52		2049.71
			5/23/2005		51.74		2049.49
			8/15/2005		51.05		2050.18
			11/15/2005		51.98		2049.25
			2/7/2006		52.12		2049.11
			5/23/2006		51.54		2049.69
			8/22/2006		52.00		2049.23
			12/5/2006		52.00		2049.23
			3/12/2007		51.92		2049.31
			10/2/2007		51.20		2050.03
			3/25/2008		51.99		2049.24
			10/22/2008		52.76		2048.47
			4/14/2009		52.20		2049.03
			9/30/2009		51.18		2050.05
			4/8/2010		52.58		2048.65
			9/15/2010		51.36		2049.87
			5/3/2011		49.70		2051.53
			9/17/2011		44.71		2056.52
PNR-13	2079.38	2081.12	8/13/2001		30.44		2050.68
			9/5/2001		30.19		2050.93
			11/6/2001		30.46		2050.66
			2/19/2002		31.48		2049.64
			5/20/2002		32.05		2049.07
			8/19/2002		32.32		2048.80
			11/4/2002		32.34		2048.78

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-13 (cont.)	2079.38	2081.12	3/4/2003		32.96		2048.16
			5/12/2003		33.01		2048.11
			8/12/2003		32.50		2048.62
			11/4/2003		32.87		2048.25
			3/16/2004		33.20		2047.92
			6/7/2004		32.93		2048.19
			9/13/2004		32.48		2048.64
			11/16/2004		32.27		2048.85
			3/1/2005		32.92		2048.20
			5/24/2005		33.26		2047.86
			8/17/2005		36.33		2044.79
			11/16/2005		34.33		2046.79
			2/8/2006		33.29		2047.83
			5/24/2006		33.49		2047.63
			8/22/2006		33.58		2047.54
			12/5/2006		33.63		2047.49
			3/12/2007		33.62		2047.50
			10/2/2007		33.04		2048.08
			3/25/2008		33.56		2047.56
			10/22/2008		34.11		2047.01
			4/14/2009		33.89		2047.23
			9/30/2009		33.25		2047.87
			4/8/2010		34.35		2046.77
			9/15/2010		34.47		2046.65
			5/3/2011		32.65		2048.47
			9/17/2011		27.27		2053.85
PNR-14	2079.82	2082.11	8/13/2001		32.50		2049.61
			9/4/2001		32.27		2049.84
			11/6/2001		32.30		2049.81
			2/19/2002		33.42		2048.69
			5/20/2002		33.77		2048.34
			8/19/2002		34.33		2047.78
			11/4/2002		34.27		2047.84
			3/4/2003		34.67		2047.44
			5/12/2003		34.71		2047.40
			8/12/2003		34.48		2047.63
			11/5/2003		34.75		2047.36
			3/16/2004		34.80		2047.31
			6/7/2004		34.71		2047.40
			9/13/2004		34.23		2047.88
			11/17/2004		34.43		2047.68

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-14 (cont.)	2079.82	2082.11	3/2/2005		34.55		2047.56
			5/25/2005		34.78		2047.33
			8/17/2005		34.41		2047.70
			11/16/2005		34.64		2047.47
			2/9/2006		34.90		2047.21
			5/24/2006		34.96		2047.15
			8/22/2006		34.94		2047.17
			12/5/2006		35.10		2047.01
			3/12/2007		35.05		2047.06
			10/2/2007		34.57		2047.54
			3/25/2008		35.03		2047.08
			10/22/2008		35.49		2046.62
			4/14/2009		35.45		2046.66
			9/30/2009		35.05		2047.06
			4/8/2010		35.74		2046.37
			9/15/2010		36.00		2046.11
			5/3/2011		34.99		2047.12
			7/7/2011		29.40		2052.71
			9/18/2011		29.82		2052.29
PNR-15	2081.92	2084.10	8/13/2001		33.86		2050.24
			9/4/2001		33.84		2050.26
			11/6/2001		34.30		2049.80
			2/19/2002		35.36		2048.74
			5/20/2002		35.87		2048.23
			8/19/2002		36.20		2047.90
			11/4/2002		36.22		2047.88
			3/4/2003	36.20	36.22	0.02	2047.89
			5/12/2003		36.81		2047.29
			8/12/2003		36.20		2047.90
			11/5/2003		36.26		2047.84
			3/16/2004		36.44		2047.66
			6/7/2004		36.31		2047.79
			9/15/2004		35.72		2048.38
			11/17/2004		36.00		2048.10
			3/2/2005		36.12		2047.98
			5/25/2005		36.39		2047.71
			8/17/2005		35.88		2048.22
			11/16/2005		36.17		2047.93
			2/8/2006		36.25		2047.85
			5/24/2006		36.48		2047.62
			8/22/2006		36.49		2047.61

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-15 (cont.)	2081.92	2084.10	12/5/2006		36.65		2047.45
			3/12/2007		36.55		2047.55
			10/2/2007		35.98		2048.12
			3/25/2008		36.46		2047.64
			10/22/2008		36.97		2047.13
			4/14/2009		36.89		2047.21
			9/30/2009		36.44		2047.66
			4/8/2010		37.05		2047.05
			9/15/2010		37.11		2046.99
			5/3/2011		36.16		2047.94
PNR-16	2053.88	2056.80	8/13/2001		13.83		2042.97
			9/5/2001		12.70		2044.10
			11/6/2001		14.50		2042.30
			2/19/2002		14.76		2042.04
			5/20/2002		13.76		2043.04
			8/19/2002		9.47		2047.33
			11/4/2002		11.69		2045.11
			3/4/2003		15.20		2041.60
			5/12/2003		10.21		2046.59
			8/12/2003		13.41		2043.39
			11/4/2003		15.42		2041.38
			3/16/2004		17.25		2039.55
			6/7/2004		7.49		2049.31
			9/13/2004		10.07		2046.73
			11/16/2004		11.90		2044.90
			3/1/2005		14.08		2042.72
			5/24/2005		12.67		2044.13
			8/17/2005		13.24		2043.56
			11/15/2005		15.89		2040.91
			2/7/2006		17.04		2039.76
			5/24/2006		13.54		2043.26
			8/22/2006		14.67		2042.13
			12/5/2006		14.36		2042.44
			3/12/2007		15.67		2041.13
			10/2/2007		16.20		2040.60
			3/25/2008		18.27		2038.53
			10/22/2008		14.40		2042.40
			4/14/2009		7.47		2049.33
			9/30/2009		13.26		2043.54
			4/8/2010		12.46		2044.34
			9/15/2010		9.08		2047.72

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-16 (cont.)	2053.88	2056.80	5/3/2011		5.51		2051.29
			7/7/2011		6.68		2050.12
			9/17/2011		9.76		2047.04
PNR-17	2084.06	2086.14	8/13/2001	30.40	55.62	25.22	2048.17
			9/4/2001	30.42	55.86	25.44	2048.09
			11/6/2001	30.98	55.86	24.88	2047.70
			2/19/2002	32.04	55.77	23.73	2046.98
			5/20/2002	32.75	NM	NM	NM
			8/19/2002	33.62	NM	NM	NM
			11/4/2002	37.68	40.43	2.75	2047.63
			3/4/2003	38.37	40.31	1.94	2047.19
			5/12/2003	38.55	40.42	1.87	2047.03
			8/12/2003	38.22	40.04	1.82	2047.37
			11/6/2003	38.28	41.11	2.83	2047.01
			3/16/2004	37.95	43.46	5.51	2046.54
			6/7/2004	37.83	43.33	5.50	2046.66
			9/16/2004	37.38	42.71	5.33	2047.16
			11/17/2004	38.19	40.65	2.46	2047.21
			3/2/2005	38.47	39.28	0.81	2047.43
			5/25/2005	38.55	40.15	1.60	2047.11
			8/17/2005	38.23	39.12	0.89	2047.64
			11/16/2005	38.54	38.64	0.10	2047.57
			2/8/2006	38.50	38.59	0.09	2047.61
			5/24/2006	38.78	39.02	0.24	2047.29
			8/22/2006	38.69	38.82	0.13	2047.41
			12/5/2006	39.87	39.96	0.09	2046.24
			3/12/2007	38.83	38.86	0.03	2047.30
			10/2/2007	38.32	38.35	0.03	2047.81
			3/25/2008	38.75	38.78	0.03	2047.38
			10/22/2008	39.21	39.24	0.03	2046.92
			4/14/2009	39.26	39.33	0.07	2046.86
			9/30/2009	38.90	39.00	0.10	2047.21
			4/8/2010	39.51	39.60	0.09	2046.60
			9/15/2010	39.55	39.71	0.16	2046.54
			5/3/2011	38.70	38.80	0.10	2047.41
			9/17/2011	33.40	33.42	0.02	2052.73

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-18	2116.21	2118.16	8/13/2001		68.90		2049.26
			9/5/2001		68.58		2049.58
			11/6/2001		69.08		2049.08
			2/19/2002		69.11		2049.05
			5/20/2002		70.10		2048.06
			8/19/2002		69.71		2048.45
			11/4/2002		69.36		2048.80
			3/4/2003		70.02		2048.14
			5/12/2003		70.38		2047.78
			8/12/2003		69.65		2048.51
			11/4/2003		70.30		2047.86
			3/16/2004		70.10		2048.06
			6/7/2004		69.44		2048.72
			9/13/2004		69.39		2048.77
			11/16/2004		69.71		2048.45
			2/28/2005		69.96		2048.20
			5/23/2005		70.13		2048.03
			8/15/2005		69.92		2048.24
			11/15/2005		70.61		2047.55
			2/7/2006		70.63		2047.53
			5/23/2006		69.96		2048.20
			8/22/2006		70.40		2047.76
			12/5/2006		70.44		2047.72
			3/12/2007		70.24		2047.92
			10/2/2007		70.05		2048.11
			3/25/2008		70.40		2047.76
			10/22/2008		71.19		2046.97
			4/14/2009		70.77		2047.39
			9/30/2009		70.17		2047.99
			4/8/2010		71.23		2046.93
			9/15/2010		71.03		2047.13
			5/3/2011		70.32		2047.84
			9/17/2011		65.58		2052.58
PNR-19	2071.26	2073.23	8/13/2001		25.75		2047.48
			9/5/2001		25.68		2047.55
			11/6/2001		25.98		2047.25
			2/19/2002		26.00		2047.23
			5/20/2002		26.37		2046.86

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-19 (cont.)	2071.26	2073.23	8/19/2002		26.75		2046.48
			11/4/2002		26.86		2046.37
			3/4/2003		27.30		2045.93
			5/12/2003		27.52		2045.71
			8/12/2003		27.44		2045.79
			11/4/2003		27.58		2045.65
			3/16/2004		27.77		2045.46
			6/7/2004		27.67		2045.56
			9/13/2004		27.38		2045.85
			11/16/2004		27.46		2045.77
			3/1/2005		27.51		2045.72
			5/25/2005		27.90		2045.33
			8/17/2005		27.69		2045.54
			11/16/2005		27.85		2045.38
			2/8/2006		27.87		2045.36
			5/24/2006		28.13		2045.10
			8/22/2006		28.14		2045.09
			12/5/2006		28.29		2044.94
			3/13/2007		28.47		2044.76
			10/2/2007		28.22		2045.01
			3/25/2008		28.36		2044.87
			10/22/2008		28.56		2044.67
			4/14/2009		28.83		2044.40
			9/30/2009		29.96		2043.27
			4/8/2010		30.10		2043.13
			9/15/2010		30.22		2043.01
			5/3/2011		28.63		2044.60
			9/18/2011		24.61		2048.62
PNR-20	2084.55	2087.16	8/18/2001		41.20		2045.96
			9/5/2001		41.05		2046.11
			11/6/2001		41.58		2045.58
			2/19/2002		41.41		2045.75
			5/20/2002		41.60		2045.56
			8/19/2002		41.91		2045.25
			11/4/2002		41.78		2045.38
			3/4/2003		42.30		2044.86
			5/12/2003		42.41		2044.75
			8/12/2003		42.39		2044.77

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-20 (cont.)	2084.55	2087.16	11/4/2003		45.20		2041.96
			3/16/2004		42.56		2044.60
			6/7/2004		42.57		2044.59
			9/13/2004		42.37		2044.79
			11/17/2004		42.61		2044.55
			3/1/2005		42.37		2044.79
			5/24/2005		42.71		2044.45
			8/16/2005		42.56		2044.60
			11/15/2005		43.59		2043.57
			2/9/2006		42.72		2044.44
			5/23/2006		42.57		2044.59
			8/22/2006		42.82		2044.34
			12/5/2006		42.81		2044.35
			3/12/2007		42.80		2044.36
			10/2/2007		43.05		2044.11
			3/25/2008		43.10		2044.06
			10/22/2008		43.65		2043.51
			4/14/2009		44.87		2042.29
			9/30/2009		45.25		2041.91
			4/8/2010		47.05		2040.11
			9/15/2010		46.93		2040.23
			5/3/2011		45.36		2041.80
			9/17/2011		42.88		2044.28
PNR-21	2099.04	2101.59	8/13/2001		58.80		2042.79
			9/5/2001		58.68		2042.91
			11/6/2001		59.12		2042.47
			2/19/2002		58.81		2042.78
			5/20/2002		58.80		2042.79
			8/19/2002		59.02		2042.57
			11/4/2002		58.89		2042.70
			3/5/2003		58.78		2042.81
			5/12/2003		58.80		2042.79
			8/12/2003		59.32		2042.27
			11/5/2003		59.70		2041.89
			3/16/2004		59.46		2042.13
			6/7/2004		59.43		2042.16
			9/13/2004		59.31		2042.28
			11/17/2004		59.46		2042.13

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-21 (cont.)	2099.04	2101.59	3/1/2005		59.23		2042.36
			5/24/2005		59.43		2042.16
			8/16/2005		59.35		2042.24
			11/15/2005		59.82		2041.77
			2/9/2006		59.64		2041.95
			5/23/2006		59.60		2041.99
			8/22/2006		59.53		2042.06
			12/5/2006		59.57		2042.02
			3/12/2007		59.46		2042.13
			10/2/2007		59.84		2041.75
			3/25/2008		59.82		2041.77
			10/22/2008		60.21		2041.38
			4/14/2009		61.07		2040.52
			9/30/2009		61.49		2040.10
			4/8/2010		62.03		2039.56
			9/15/2010		61.15		2040.44
			5/3/2011		61.85		2039.74
			7/7/2011		60.68		2040.91
			9/17/2011		59.57		2042.02
PNR-22	2127.38	2129.43	8/13/2001		81.50		2047.93
			9/5/2001		81.21		2048.22
			11/6/2001		81.66		2047.77
			2/19/2002		81.48		2047.95
			5/20/2002		81.90		2047.53
			8/19/2002		82.11		2047.32
			11/4/2002		81.75		2047.68
			3/4/2003		82.41		2047.02
			5/12/2003		82.62		2046.81
			8/12/2003		82.22		2047.21
			11/5/2003		82.60		2046.83
			3/16/2004		82.47		2046.96
			6/7/2004		82.24		2047.19
			9/13/2004		81.98		2047.45
			11/18/2004		82.15		2047.28
			3/1/2005		82.22		2047.21
			5/24/2005		82.65		2046.78
			8/16/2005		82.52		2046.91
			11/15/2005		83.07		2046.36

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-22 (cont.)	2127.38	2129.43	2/7/2006		83.08		2046.35
			5/25/2006		82.58		2046.85
			8/22/2006		82.78		2046.65
			12/5/2006		82.80		2046.63
			3/12/2007		82.60		2046.83
			10/2/2007		82.66		2046.77
			3/25/2008		82.82		2046.61
			10/22/2008		83.59		2045.84
			4/14/2009		83.25		2046.18
			9/30/2009		82.91		2046.52
			4/8/2010		83.90		2045.53
			9/15/2010		84.04		2045.39
			5/3/2011		83.55		2045.88
			9/17/2011		79.32		2050.11
PNR-23	2083.00	2085.27	8/13/2001		35.85		2049.42
			9/4/2001		35.90		2049.37
			11/6/2001		36.03		2049.24
			2/19/2002		36.88		2048.39
			5/20/2002		37.35		2047.92
			8/19/2002		37.78		2047.49
			11/4/2002		37.81		2047.46
			3/4/2003		38.26		2047.01
			5/12/2003		38.34		2046.93
			8/12/2003		38.13		2047.14
			11/6/2003		38.36		2046.91
			3/16/2004		38.62		2046.65
			6/7/2004		38.51		2046.76
			9/15/2004		38.10		2047.17
			11/17/2004		38.35		2046.92
			3/2/2005		38.51		2046.76
			5/25/2005		38.78		2046.49
			8/17/2005		38.44		2046.83
			11/16/2005		38.57		2046.70
			2/9/2006		38.79		2046.48
			5/25/2006		38.67		2046.60
			8/22/2006		38.75		2046.52
			12/5/2006		38.90		2046.37
			3/12/2007		38.85		2046.42

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-23 (cont.)	2083.00	2085.27	10/2/2007		38.36		2046.91
			3/25/2008		38.73		2046.54
			10/22/2008		39.08		2046.19
			4/14/2009		39.20		2046.07
			9/30/2009		38.92		2046.35
			4/8/2010		39.62		2045.65
			9/15/2010		40.13		2045.14
			5/3/2011		39.11		2046.16
			9/17/2011		33.87		2051.40
PNR-24	2083.00	2085.68	8/13/2001		36.30		2049.38
			9/4/2001		36.31		2049.37
			11/6/2001		36.45		2049.23
			2/19/2002		37.17		2048.51
			5/20/2002		37.52		2048.16
			8/19/2002		37.88		2047.80
			11/4/2002	37.90	39.68	1.78	2047.25
			3/4/2003	38.38	40.05	1.67	2046.80
			5/12/2003	38.48	38.48	0.00	2047.20
			8/12/2003	38.39	39.35	0.96	2047.00
			11/6/2003	38.53	39.90	1.37	2046.74
			3/16/2004	38.70	44.30	5.60	2045.30
			6/7/2004	38.65	39.98	1.33	2046.63
			9/15/2004	38.33	38.51	0.18	2047.30
			11/17/2004	38.51	39.21	0.70	2046.96
			3/2/2005	38.61	39.50	0.89	2046.80
			5/25/2005	38.74	39.91	1.17	2046.59
			8/17/2005	38.54	38.89	0.35	2047.03
			11/16/2005	38.65	39.09	0.44	2046.90
			2/8/2006	38.63	39.24	0.61	2046.87
			5/24/2006	38.90	39.87	0.97	2046.49
			8/22/2006	38.86	39.85	0.99	2046.52
			12/5/2006	39.12	39.75	0.63	2046.37
			3/12/2007	39.06	39.26	0.20	2046.56
			10/2/2007		38.65		2047.03
			3/25/2008		39.05		2046.63
			10/22/2008	39.42	39.52	0.10	2046.23
			4/14/2009	39.45	39.61	0.16	2046.18
			9/30/2009	39.20	39.45	0.25	2046.40

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-24 (cont.)	2083.00	2085.68	4/8/2010	39.84	n/a (>40.65)	n/a (>0.81)	n/a
			9/15/2010	40.3	n/a (>40.65)	n/a (>0.35)	n/a
			5/3/2011	39.51	39.64	0.13	2046.13
			9/17/2011	34.26	34.27	0.01	2051.42
PNR-25	2081.92	2084.03	8/13/2001	33.78	34.08	0.30	2050.16
			9/4/2001		33.73		2050.30
			11/6/2001		34.09		2049.94
			2/19/2002	34.98	36.63	1.65	2048.56
			5/20/2002	35.36	NM	NM	NM
			8/19/2002	35.64	NM	NM	NM
			11/4/2002	35.55	37.48	1.93	2047.90
			3/4/2003	35.91	38.04	2.13	2047.48
			5/12/2003	36.02	38.04	2.02	2047.40
			8/12/2003	35.62	37.03	1.41	2047.99
			11/5/2003	35.15	37.50	2.35	2048.18
			3/16/2004	35.93	38.00	2.07	2047.48
			6/7/2004	35.86	37.53	1.67	2047.67
			9/15/2004	35.37	36.58	1.21	2048.30
			11/17/2004	35.60	37.08	1.48	2047.99
			3/2/2005	35.66	37.35	1.69	2047.86
			5/25/2005	35.90	37.86	1.96	2047.54
			8/17/2005	35.55	37.03	1.48	2048.04
			11/16/2005	35.77	37.51	1.74	2047.74
			2/8/2006	35.82	37.88	2.06	2047.59
			5/24/2006	36.01	38.12	2.11	2047.39
			8/22/2006	36.04	38.19	2.15	2047.35
			12/5/2006	36.15	38.30	2.15	2047.24
			3/12/2007	36.12	38.23	2.11	2047.28
			10/2/2007	35.65	37.02	1.37	2047.97
			3/25/2008	36.05	37.89	1.84	2047.43
			10/22/2008	38.58	39.98	1.40	2045.03
			4/14/2009	36.37	38.52	2.15	2047.02
			9/30/2009	36.05	37.75	1.70	2047.47
			4/8/2010	36.68	38.90	2.22	2046.68
			9/15/2011	36.74	38.31	1.57	2046.82
			5/3/2011	35.94	37.25	1.31	2047.70
			9/17/2011	31.12	31.12	0.00	2052.91

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-26	2084.06	2086.15	8/13/2001	34.65	36.85	2.20	2050.84
			9/4/2001	35.96	37.12	1.16	2049.84
			11/6/2001	36.24	37.12	0.88	2049.65
			2/19/2002	36.98	39.30	2.32	2048.47
			5/20/2002	37.43	NM	NM	NM
			8/19/2002	37.78	NM	NM	NM
			11/4/2002	37.76	40.15	2.39	2047.67
			3/4/2003	38.11	40.07	1.96	2047.45
			5/12/2003	38.20	40.09	1.89	2047.38
			8/12/2003	37.82	39.98	2.16	2047.68
			11/6/2003	37.93	39.99	2.06	2047.60
			3/16/2004	38.80	40.01	1.21	2046.99
			6/7/2004	38.02	40.02	2.00	2047.53
			9/16/2004	37.60	39.73	2.13	2047.91
			11/17/2004	37.79	39.98	2.19	2047.70
			3/2/2005	37.87	40.00	2.13	2047.64
			5/25/2005	38.01	39.92	1.91	2047.57
			8/17/2005	37.78	40.00	2.22	2047.70
			11/16/2005	37.92	40.00	2.08	2047.61
			2/8/2006	37.90	40.01	2.11	2047.62
			5/24/2006	38.23	40.05	1.82	2047.37
			8/22/2006	38.18	40.04	1.86	2047.41
			12/5/2006	38.35	40.05	1.70	2047.29
			3/12/2007	38.34	40.03	1.69	2047.30
			10/2/2007	37.94	40.03	2.09	2047.58
			3/25/2008	38.24	39.99	1.75	2047.39
			10/22/2008	36.44	38.50	2.06	2049.09
			4/14/2009	38.71	39.95	1.24	2047.07
			9/30/2009	38.50	39.95	1.45	2047.22
			4/8/2010	39.10	39.90	0.80	2046.81
			9/15/2010	39.13	39.95	0.82	2046.77
			5/3/2011	38.47	39.84	1.37	2047.27
			9/17/2011	33.89	34.66	0.77	2052.03
PNR-27	2092.86	2095.30	9/5/2001		67.28		2028.02
			11/6/2001		55.68		2039.62
			2/19/2002		55.32		2039.98
			5/20/2002		55.25		2040.05
			8/19/2002		55.34		2039.96

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-27 (cont.)	2092.86	2095.30	11/4/2002		55.25		2040.05
			3/5/2003		55.17		2040.13
			5/12/2003		55.62		2039.68
			8/12/2003		55.67		2039.63
			11/5/2003		56.20		2039.10
			6/7/2004		56.80		2038.50
			9/13/2004		55.73		2039.57
			11/17/2004		55.91		2039.39
			3/2/2005		55.63		2039.67
			5/24/2005		55.79		2039.51
			8/16/2005		55.64		2039.66
			11/15/2005		56.04		2039.26
			2/8/2006		55.65		2039.65
			5/23/2006		55.66		2039.64
			8/22/2006		55.85		2039.45
			12/5/2006		55.92		2039.38
			3/12/2007		55.79		2039.51
			10/2/2007		56.23		2039.07
			3/25/2008		56.20		2039.10
			10/22/2008		56.52		2038.78
			4/14/2009		57.02		2038.28
			9/30/2009		57.25		2038.05
			4/8/2010		57.72		2037.58
			9/15/2010		58.16		2037.14
			5/3/2011		58.07		2037.23
			7/7/2011		57.45		2037.85
			9/17/2011		56.27		2039.03
PNR-28	2079.64	2078.44	9/5/2001		46.38		2032.06
			11/6/2001		44.85		2033.59
			2/19/2002		44.67		2033.77
			5/20/2002		44.45		2033.99
			8/19/2002		44.59		2033.85
			11/4/2002		44.55		2033.89
			3/5/2003		44.49		2033.95
			5/12/2003		44.40		2034.04
			8/12/2003		44.89		2033.55
			11/5/2003		46.20		2032.24
			6/7/2004		45.24		2033.20

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-28 (cont.)	2079.64	2078.44	9/15/2004		45.19		2033.25
			11/17/2004		45.28		2033.16
			3/1/2005		45.06		2033.38
			5/25/2005		45.23		2033.21
			8/16/2005		45.02		2033.42
			11/15/2005		45.61		2032.83
			2/8/2006		45.17		2033.27
			5/23/2006		45.17		2033.27
			8/22/2006		45.21		2033.23
			12/5/2006		45.37		2033.07
			3/12/2007		45.24		2033.20
			10/2/2007		45.65		2032.79
			3/25/2008		45.55		2032.89
			10/22/2008		45.74		2032.70
			4/14/2009		45.91		2032.53
			9/30/2009		45.99		2032.45
			4/8/2010		46.37		2032.07
			9/15/2010		48.03		2030.41
			5/3/2011		48.52		2029.92
			9/18/2011		45.98		2032.46
PNR-29	2073.76	2072.64	9/5/2001		41.86		2030.78
			11/6/2001		40.28		2032.36
			2/19/2002		40.03		2032.61
			5/20/2002		39.80		2032.84
			8/19/2002		39.96		2032.68
			11/4/2002		39.82		2032.82
			3/5/2003		39.70		2032.94
			5/12/2003		40.17		2032.47
			8/12/2003		40.21		2032.43
			11/4/2003		40.70		2031.94
			6/15/2004		40.54		2032.10
			9/15/2004		40.54		2032.10
			11/17/2004		40.64		2032.00
			3/1/2005		40.39		2032.25
			5/25/2005		40.68		2031.96
			8/16/2005		40.42		2032.22
			11/15/2005		41.03		2031.61
			2/8/2006		40.45		2032.19

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-29 (cont.)	2073.76	2072.64	5/23/2006		40.47		2032.17
			8/22/2006		40.60		2032.04
			12/5/2006		40.63		2032.01
			3/12/2007		40.68		2031.96
			10/2/2007		40.95		2031.69
			3/25/2008		40.83		2031.81
			10/22/2008		41.14		2031.50
			4/14/2009		41.06		2031.58
			9/30/2009		40.85		2031.79
			4/8/2010		41.24		2031.40
			9/15/2010		42.10		2030.54
			5/3/2011		42.68		2029.96
			9/18/2011		40.23		2032.41
PNR-30-06	2083.55	2083.55	10/19/2006		37.91		2045.64
			12/5/2006	37.50	40.70	3.20	2045.09
			3/12/2007	37.39	40.86	3.47	2045.12
PNR-31-06	2098.91	2100.98	10/19/2006		58.69		2042.29
			12/5/2006		58.85		2042.13
			3/12/2007		58.59		2042.39
			10/2/2007		58.95		2042.03
			3/25/2008		58.86		2042.12
			4/14/2009		60.15		2040.83
			9/30/2009		60.58		2040.40
			4/8/2010		61.11		2039.87
			9/15/2010		61.22		2039.76
			9/17/2011		58.80		2042.18
PNR-32-06	2098.17	2100.01	10/19/2006		57.87		2042.14
			12/5/2006		58.00		2042.01
			3/12/2007		57.80		2042.21
			10/2/2007		58.16		2041.85
			3/25/2008		58.14		2041.87
			4/14/2009		59.44		2040.57
			9/30/2009		59.96		2040.05
			4/8/2010		60.45		2039.56
			9/15/2010		60.55		2039.46
			9/17/2011		58.08		2041.93

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-33-06	2142.86	2144.53	10/19/2006		102.50		2042.03
			12/5/2006		100.76		2043.77
			3/12/2007		102.35		2042.18
			10/2/2007		102.81		2041.72
			3/25/2008		102.89		2041.64
			10/22/2008		103.52		2041.01
			4/14/2009		103.32		2041.21
			9/30/2009		103.27		2041.26
			4/8/2010		103.75		2040.78
			9/15/2010		104.50		2040.03
			5/2/2011		104.33		2040.20
			9/17/2011		100.95		2043.58
PNR-34-07	2053.42	2052.14	3/12/2007		93.84		1958.30
			10/2/2007		94.31		1957.83
			3/25/2008		94.20		1957.94
			10/22/2008		94.89		1957.25
			4/14/2009		93.35		1958.79
			9/30/2009		93.90		1958.24
			4/8/2010		93.93		1958.21
			9/15/2010		94.40		1957.74
			5/3/2011		91.86		1960.28
			9/18/2011		91.85		1960.29
PNR-35-07	2060.91	2059.75	3/12/2007		71.15		1988.60
			10/2/2007		71.55		1988.20
			3/25/2008		71.37		1988.38
			10/22/2008		71.34		1988.41
			4/14/2009		71.19		1988.56
			9/30/2009		71.24		1988.51
			4/8/2010		71.30		1988.45
			9/15/2010		71.69		1988.06
			5/3/2011		71.74		1988.01
			9/18/2011		70.64		1989.11
PNR-36-07	2104.80	2107.00	3/12/2007		54.74		2052.26
			10/2/2007		53.88		2053.12
			3/25/2008		54.76		2052.24
			10/22/2008		55.57		2051.43
			4/14/2009		54.95		2052.05
			9/30/2009		53.70		2053.30
			4/8/2010		54.96		2052.04

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
PNR-36-07 (cont.)	2104.80	2107.00	9/15/2010		52.82		2054.18
			5/3/2011		51.30		2055.70
			9/17/2011		45.89		2061.11
PNR-37-07	2097.50	2100.50	10/2/2007		50.41		2050.09
			3/25/2008		51.18		2049.32
			4/14/2009		51.41		2049.09
			9/30/2009		50.36		2050.14
			4/8/2010		51.75		2048.75
			9/15/2010		50.57		2049.93
			5/3/2011		48.84		2051.66
			9/18/2011		44.12		2056.38
PNR-38-08	2038.21	2039.34	3/25/2008		86.52		1952.82
			10/22/2008		87.93		1951.41
			4/14/2009		85.81		1953.53
			9/30/2009		86.86		1952.48
			4/8/2010		86.65		1952.69
			9/15/2010		87.34		1952.00
			5/3/2011		84.03		1955.31
			7/7/2011		82.14		1957.20
PNR-39-08	2052.80	2055.27	9/17/2011		84.33		1955.01
			10/22/2008		98.38		1956.89
			4/14/2009		96.71		1958.56
			9/30/2009		97.46		1957.81
			4/8/2010		97.63		1957.64
			9/15/2010		98.41		1956.86
			5/3/2011		96.09		1959.18
			7/7/2011		94.36		1960.91
USGS-06-1			9/18/2011		96.25		1959.02
			4/14/2009		54.01		
USGS-06-2			4/14/2009		48.84		
USGS-06-7			10/4/2007		62.45		
			9/18/2011		58.83		
USGS-06-8			10/4/2007		61.79		
			4/14/2009		55.34		
			9/18/2011		58.23		

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
USGS-06-9			10/4/2007		16.79		
USGS-06-11			4/14/2009		14.95		
			9/18/2011		13.50		
USGS09-1	2034.52	2035.37	9/18/2011		84.01		1951.36
USGS09-2	1959.25	1961.05	12/1/2009		16.43		1944.62
			7/7/2011		9.58		1951.47
			9/18/2011		12.82		1948.23
USGS09-3	2030.99	2032.62	12/3/2009		83.90		1948.72
			7/7/2011		78.20		1954.42
			9/18/2011		80.85		1951.77
USGS09-4	1998.12	1999.48	9/18/2011		49.07		1950.41
USGS09-6	1976.95	1978.26	12/4/2009		15.73		1962.53
			7/7/2011		11.73		1966.53
			7/18/2011		14.22		1964.04
USGS09-7	2014.46	2016.56	12/3/2009		54.96		1961.60
			7/7/2011		50.55		1966.01
			9/18/2011		52.83		1963.73
USGS-92-12	2063.92	2065.92	5/31/2001		15.10		2050.82
			8/13/2001		10.70		2055.22
			9/5/2001		12.12		2053.80
			11/6/2001		13.11		2052.81
			2/19/2002		13.85		2052.07
			5/20/2002		13.65		2052.27
			8/19/2002		12.68		2053.24
			11/4/2002		12.77		2053.15
			3/4/2003		14.20		2051.72
			5/12/2003		12.58		2053.34
			8/12/2003		11.99		2053.93
			11/5/2003		17.10		2048.82
			6/7/2004		10.75		2055.17
			9/14/2004		10.70		2055.22
			11/16/2004		12.35		2053.57
			3/1/2005		13.28		2052.64

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
USGS-92-12 (cont.)	2063.92	2065.92	5/25/2005		12.02		2053.90
			8/17/2005		11.00		2054.92
			11/15/2005		12.50		2053.42
			2/7/2006		13.08		2052.84
			5/24/2006		12.22		2053.70
			8/22/2006		14.04		2051.88
			12/5/2006		14.90		2051.02
			3/12/2007		14.97		2050.95
			10/2/2007		12.84		2053.08
			3/25/2008		14.47		2051.45
			10/22/2008		14.83		2051.09
			4/14/2009		10.90		2055.02
			9/30/2009		11.33		2054.59
			4/8/2010		12.75		2053.17
			9/15/2010		8.79		2057.13
			5/3/2011		6.83		2059.09
			9/17/2011		7.68		2058.24
USGS-92-6			4/14/2009		17.05		
USGS-92-7			4/14/2009		11.26		
USGS-92-9			4/14/2009		7.75		
USGS 93-3	2082.10	2083.46	5/31/2001		35.07		2048.39
			11/6/2001		35.22		2048.24
			2/19/2002		35.72		2047.74
			5/20/2002		36.30		2047.16
			8/19/2002		36.75		2046.71
			11/4/2002		36.81		2046.65
			3/4/2003		37.20		2046.26
			5/12/2003		37.23		2046.23
			8/12/2003		37.16		2046.30
			11/4/2003		37.32		2046.14
			3/16/2004		39.58		2043.88
			6/7/2004		37.47		2045.99
			9/14/2004		37.07		2046.39
			11/17/2004		37.25		2046.21
			3/1/2005		37.26		2046.20
			5/25/2005		37.52		2045.94
			8/17/2005		37.35		2046.11
			11/16/2005		37.41		2046.05

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
USGS 93-3 (cont.)	2082.10	2083.46	2/9/2006		37.75		2045.71
			5/24/2006		37.90		2045.56
			8/22/2006		37.92		2045.54
			12/5/2006		38.00		2045.46
			3/12/2007		38.02		2045.44
			10/2/2007		37.72		2045.74
			3/25/2008		38.04		2045.42
			10/22/2008		38.40		2045.06
			4/14/2009		38.51		2044.95
			9/30/2009		38.00		2045.46
			4/8/2010		39.07		2044.39
			9/15/2010		39.88		2043.58
			5/3/2011		38.71		2044.75
			9/17/2011		33.06		2050.40
USGS 93-3A	2081.97	2083.23	8/13/2001		35.15		2048.08
			9/5/2001		35.11		2048.12
			11/6/2001		34.96		2048.27
			5/20/2002		36.05		2047.18
			8/19/2002		36.62		2046.61
			11/4/2002		36.59		2046.64
			8/12/2003		36.94		2046.29
			11/5/2003		37.89		2045.34
			6/7/2004		37.28		2045.95
			11/17/2004		37.25		2045.98
			3/1/2005		37.26		2045.97
			5/25/2005		37.52		2045.71
USGS-93-4A			4/14/2009		41.49		
USGS-93-5			4/17/2009		55.04		
			9/18/2011		55.77		

**Table B-1. Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Mesa-Biere 1-22 Well Site Investigation**

Well Name	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
Whitmer	1980.41	1981.44	5/31/2001		23.82		1957.62
			11/6/2001		24.30		1957.14
			2/19/2002		24.30		1957.14
			5/20/2002		24.10		1957.34
			8/19/2002		24.20		1957.24
			11/4/2002		24.30		1957.14
			3/4/2003		24.30		1957.14
			5/12/2003		24.20		1957.24
			8/12/2003		25.00		1956.44
			3/18/2004		24.10		1957.34
			6/7/2004		22.09		1959.35
			9/16/2004		23.90		1957.54
			11/18/2004		24.20		1957.24
			3/2/2005		24.10		1957.34
			5/24/2005		24.20		1957.24
			8/16/2005		24.03		1957.41
			11/17/2005		24.22		1957.22
			2/9/2006		23.84		1957.60
			5/25/2006		23.58		1957.86
			8/22/2006		24.40		1957.04
			12/5/2006		24.07		1957.37
			3/12/2007		23.51		1957.93
			10/2/2007		24.30		1957.14
			3/25/2008		23.98		1957.46
			4/14/2009		22.33		1959.11
			9/30/2009		23.85		1957.59
			4/8/2010		23.60		1957.84
			9/15/2010		24.21		1957.23
			5/3/2011		20.69		1960.75
			9/17/2011		21.71		1959.73

Notes:

* = Groundwater elevation corrected for LNAPL thickness; Corrected Depth to Water = Depth to Water - .7 x Accum. LNAPL.

All elevations are provided in feet above mean sea level (MSL).

Acronyms/Abbreviations:

ft = feet

ft bmp = feet below measuring point

LNAPL = light non-aqueous phase liquid

**Table B-2. Inorganic Water Chemistry Data
Mesa-Biere 1-22 Well Site Investigation**

Well No.	Date	Field EC (mS)	Field Temp. (°C)	Field Dissolved Oxygen (mg/L)	Field pH (s.u.)	Chloride (mg/L)	Total Dissolved Solids @ 180°C (mg/L)
M-18	9/20/11	15.8	9.9	0.47	7.33	5,210	9,710
M-27	9/20/11	17.7	9.5	1.46	6.75	6,250	12,300
M-28	9/19/11	9.1	9.8	0.34	7.03	1,610	5,990
M-31	9/20/11	77.6	9.3	0.72	6.57	34,500	52,600
M-60	9/19/11	8.6	9.6	0.27	7.24	2,710	5,330
MOC-1B	9/20/11	4.5	8.7	0.25	6.63	54	3,590
MOC-2	9/21/11	20.3	9.6	1.24	6.78	6,810	13,300
MOC-3	9/19/11	3.8	9.6	1.56	6.60	62	2,900
MOC-4	9/23/11	8.6	10.0	0.24	7.30	2,460	5,220
MOC-20A	9/23/11	5.8	10.6	1.07	6.70	150	5,390
MOC-20B	9/21/11	5.1	9.1	0.25	6.51	250	3,830
PNR-5	9/19/11	14.2	29.7	0.34	7.22	3,950	7,950
PNR-6	9/20/11	6.2	8.0	3.37	6.80	61	5,360
PNR-7	9/23/11	63.6	8.5	0.74	6.37	27,700	46,900
PNR-8	9/23/11	8.5	11.0	1.22	6.49	2,910	6,500
PNR-9	9/20/11	15.7	9.8	0.86	7.14	5,480	10,300
PNR-10	9/22/11	8.2	9.7	0.29	6.62	1,600	5,270
PNR-12	9/19/11	5.3	9.2	0.55	6.50	56	4,450
PNR-13	9/21/11	3.8	11.2	3.55	6.57	134	2,900
PNR-14	9/20/11	13.0	20.5	0.81	6.67	3,430	8,270
PNR-16	9/20/11	5.2	10.1	5.12	6.55	17	4,690
PNR-18	9/21/11	4.5	9.2	0.29	6.59	124	3,530
PNR-19	9/22/11	5.0	8.7	nm	7.11	1,120	3,390
PNR-20	9/22/11	40.6	9.2	1.66	6.63	16,000	28,800
PNR-21	9/21/11	30.1	9.6	0.70	6.61	10,400	18,100
PNR-22	9/22/11	5.3	10.1	0.43	6.54	613	3,650
PNR-23	9/23/11	7.8	37.2	0.48	7.63	1,310	4,870
PNR-27	9/21/11	27.8	9.4	1.47	6.56	10,100	21,000
PNR-28	9/21/11	31.4	9.2	5.00	6.43	11,700	25,900
PNR-29	9/20/11	5.9	8.5	0.50	6.49	76	4,650
PNR-33-06	9/20/11	5.4	8.8	1.93	6.69	93	4,720
PNR-34-07	9/22/11	32.8	9.8	0.91	6.63	13,100	22,800
PNR-35-07	9/21/11	4.5	9.3	0.28	6.53	149	3,350
PNR-36-07	9/20/11	3.7	8.6	0.20	6.40	55	2,950
PNR-38-08	9/22/11	8.0	9.0	0.21	6.71	1,660	5,150
PNR-39-08	9/21/11	26.9	9.5	3.22	6.47	9,710	22,500
USGS06-7	9/18/11	1.3	9.1	0.12	7.32	19	748
USGS06-11	9/18/11	1.4	7.4	0.23	7.14	18	745
USGS09-2	9/18/11	3.4	8.5	0.90	7.59	826	1,840
USGS09-3	9/19/11	2.6	9.1	0.11	7.15	393	1,390
USGS09-6	9/19/11	15.5	8.2	11.00	6.91	7,990	14,100

**Table B-2. Inorganic Water Chemistry Data
Mesa-Biere 1-22 Well Site Investigation**

Well No.	Date	Field EC (mS)	Field Temp. (°C)	Field Dissolved Oxygen (mg/L)	Field pH (s.u.)	Chloride (mg/L)	Total Dissolved Solids @ 180°C (mg/L)
USGS92-12	9/18/11	3.2	8.9	0.30	7.21	2	2,760
USGS93-3	9/22/11	29.8	20.1	0.39	7.01	10,800	17,200
USGS93-5	9/18/11	26.1	9.8	0.25	7.12	9,140	16,200

Notes:

nm = Not measured

mnw = Meter failure, reading recorded in field notes but not used

or = Over range of meter, EC>2.0 mS

< # = Not detected, number shown is reporting limit

**Table B-3. BTEX and TPH Analyses
Mesa-Biere 1-22 Well Site Investigation**

Well No.	Date and Time	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	Total Petroleum Hydro- carbons (mg/L)
M-28	9/19/2011 11:36	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
M-31	9/22/2011 13:47	26	< 0.5	< 0.5	< 0.5	< 1.0
M-60	9/19/2011 15:06	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-7	9/23/2011 9:46	31	< 0.5	< 0.5	< 0.5	< 1.0
PNR-19	9/22/2011 10:26	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PNR-20	9/22/2011 11:17	10	< 0.5	< 0.5	< 0.5	< 1.0
PNR-21	9/21/2011 15:45	< 0.5	< 0.5	< 0.5	< 0.5	1.0
PNR-23	9/23/2011 10:43	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
Trip Blank TB 09-01-11 TS SHP0255	9/21/2011 15:06	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Trip Blank TB090111-TS SHP0255 #1	9/22/2011 10:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Trip Bank TB090111-TS SHP0255 #2	9/22/2011 10:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Trip Bank TB090111-TS SHP0255 #3	9/22/2011 10:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Trip Bank TB090111-TS SHP0255 #4	9/22/2011 10:05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1

Notes

< # = Analyte not detected, number shown is reporting limit

J = Estimated value. Present but less than the limit of quantitation.

H = Analysis performed past recommended holding time.

nm = Not measured.

T = This target analyte was found in the associated trip blank as well as the sample.

**Table B-4. Chloride and BTEX Analyses, Brine Recovery Wells
Mesa-Biere 1-22 Well Site Investigation**

Well No.	Date and Time	Chloride (mg/L)	pH (s.u.)	EC @ 25°C (mS/cm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
PNR-RW-1	1/9/2008 14:33	28,000	nm	71.2	19.00	< 0.50	< 0.50	< 0.50
PNR-RW-1	10/5/2009 15:10	25,600	nm	55.4	19.00	< 0.50	< 0.50	< 0.50
PNR-RW-1	4/14/2010 10:00	25,400	6.9	52.9	17.00	< 0.50	< 0.50	< 0.50
PNR-RW-1	9/17/2010 13:35	22,600	nm	54.1	17.00	< 0.50	< 0.50	< 0.50
PNR-RW-1	9/22/2011 10:05	17,900	6.5	49.4	11.00	< 0.50	< 0.50	< 0.50
PNR-RW-2	1/9/2008 12:20	22,400	nm	59.7	13.00	< 0.50	< 0.50	< 0.50
PNR-RW-2	4/22/2009 19:20	17,500	nm	48.5	14.00	< 0.50	< 0.50	< 0.50
PNR-RW-2	10/5/2009 15:20	22,900	nm	50.4	16.00	< 0.50	< 0.50	< 0.50
PNR-RW-2	4/14/2010 10:30	22,400	6.9	47.9	15.00	< 0.50	< 0.50	< 0.50
PNR-RW-2	9/17/2010 14:00	18,500	nm	45.6	15.00	< 0.50	< 0.50	< 0.50
PNR-RW-2	9/22/2011 10:25	15,600	6.5	44.2	10.00	< 0.50	< 0.50	< 0.50
PNR-RW-3	1/8/2008 16:08	31,800	nm	76.8	23.00	< 0.50	< 0.50	0.49 (J)
PNR-RW-3	4/22/2009 19:05	22,000	nm	58.5	12.00	< 0.50	< 0.50	< 0.50
PNR-RW-3	10/14/2009 14:10	31,200	nm	nm	16.00	< 0.50	< 0.50	< 0.50
PNR-RW-3	4/16/2010 9:20	36,400	6.7	67.9	18.00	< 0.50	< 0.50	< 0.50
PNR-RW-3	9/17/2010 14:10	11,200	nm	29.4	18.00	< 0.50	< 0.50	< 0.50
PNR-RW-3	5/6/2011 11:45	24,100	6.8	52.8	12.00	< 0.50	< 0.50	< 0.50
PNR-RW-3	9/22/2011 10:40	21,100	6.8	52.8	9.90	< 0.50	< 0.50	< 0.50
PNR-RW-4	1/8/2008 14:10	24,400	nm	63.6	20.00	< 0.50	< 0.50	< 0.50
PNR-RW-4	4/22/2009 18:55	19,700	nm	53.6	14.00	< 0.50	< 0.50	< 0.50
PNR-RW-4	10/5/2009 15:30	23,500	nm	50.3	11.00	< 0.50	< 0.50	< 0.50
PNR-RW-4	4/14/2010 11:00	21,500	6.9	46.8	8.60	< 0.50	< 0.50	< 0.50
PNR-RW-4	9/17/2010 14:20	14,700	nm	37.9	5.90	< 0.50	< 0.50	< 0.50
PNR-RW-4	5/6/2011 13:54	12,700	7.0	30.9	2.70	< 0.50	< 0.50	< 0.50
PNR-RW-4	9/22/2011 11:20	11,400	6.6	33.6	2.0	< 0.50	< 0.50	< 0.50
PNR-RW-5	1/8/2008 11:47	15,000	nm	42.4	5.00	< 0.50	< 0.50	< 0.50
PNR-RW-5	4/22/2009 18:40	15,800	nm	44.0	6.20	< 0.50	< 0.50	< 0.50
PNR-RW-5	10/5/2009 15:45	18,000	nm	41.7	5.40	< 0.50	< 0.50	< 0.50
PNR-RW-5	4/14/2010 11:15	15,200	6.8	36.6	4.70	< 0.50	< 0.50	< 0.50
PNR-RW-5	9/17/2010 14:30	12,300	nm	32.4	3.50	< 0.50	< 0.50	< 0.50
PNR-RW-5	5/6/2011 14:09	10,900	6.8	10.9	2.20	< 0.50	< 0.50	< 0.50
PNR-RW-5	9/22/2011 11:35	9,120	6.6	28.7	2.40	< 0.50	< 0.50	< 0.50

**Table B-4. Chloride and BTEX Analyses, Brine Recovery Wells
Mesa-Biere 1-22 Well Site Investigation**

Well No.	Date and Time	Chloride (mg/L)	pH (s.u.)	EC @ 25°C (mS/cm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
PNR-RW-6	4/22/2009 17:00	18,800	nm	50.7	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-6	4/19/2010 14:40	21,500	6.8	46.4	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-6	9/17/2010 14:45	19,200	nm	46.2	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-6	5/6/2011 11:20	18,600	6.8	40.5	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-6	9/22/2011 13:30	13,800	6.4	39.5	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-6	12/28/2011 14:55	11,700	6.7	34.8	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-7A	4/22/2009 17:15	17,900	nm	47.0	< 0.50	0.61	< 0.50	< 0.50
PNR-RW-7A	10/5/2009 14:15	20,400	nm	47.5	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-7A	4/16/2010 10:30	23,100	6.8	45.3	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-7A	9/22/2010 16:00	17,700	nm	42.5	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-8	4/22/2009 16:45	18,900	nm	50.3	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-8	10/5/2009 14:30	23,300	nm	49.9	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-8	4/19/2010 14:10	22,700	6.9	50.1	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-8	12/28/2011 14:30	11,400	6.6	34.5	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-9	4/22/2009 17:45	21,800	nm	58.6	1.90	< 0.50	5.1	0.99
PNR-RW-9	10/14/2009 14:10	13,900	nm	nm	1.40	< 0.50	8.5	3.3
PNR-RW-9	4/14/2010 12:05	16,900	7.1	41.8	0.91	< 0.50	6.9	6.6
PNR-RW-9	9/17/2010 15:20	12,300	nm	33.3	0.91	< 0.50	8.2	3.5
PNR-RW-9	5/6/2011 14:25	9,350	7.3	25.8	0.65	< 0.50	4.7	1.5
PNR-RW-9	9/23/2011 11:30	8,650	6.8	26.9	0.46	< 0.50	2.5	1.3
PNR-RW-10	4/22/2009 18:00	871	nm	6.8	13.00	42	19	49
PNR-RW-10	10/5/2009 14:50	914	nm	6.7	12.00	62	30	96
PNR-RW-10	4/14/2010 11:50	641	8.5	5.9	10.00	39	23	61
PNR-RW-10	9/21/2010 10:00	315	nm	4.9	39.00	139	78	212
PNR-RW-10	5/6/2011 14:42	436	8.0	5.0	6.80	28	33	69
PNR-RW-11	10/1/2009 10:45	36,700	nm	82.6	12.00	< 0.50	< 0.50	< 0.50
PNR-RW-11	4/15/2010 10:00	31,900	6.9	63.0	9.10	< 0.50	< 0.50	< 0.50
PNR-RW-11	9/17/2010 15:10	24,700	nm	58.3	9.90	< 0.50	< 0.50	< 0.50
PNR-RW-11	5/6/2011 14:55	20,300	7.0	47.5	8.30	< 0.50	< 0.50	< 0.50
PNR-RW-11	9/23/2011 11:13	19,100	6.6	52.3	8.90	< 0.50	< 0.50	< 0.50

**Table B-4. Chloride and BTEX Analyses, Brine Recovery Wells
Mesa-Biere 1-22 Well Site Investigation**

Well No.	Date and Time	Chloride (mg/L)	pH (s.u.)	EC @ 25°C (mS/cm)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
PNR-RW-12	4/19/2010 15:05	22,000	6.8	47.4	0.70	< 0.50	< 0.50	< 0.50
PNR-RW-12	9/17/2010 14:55	19,200	nm	47.1	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-12	5/6/2011 11:35	18,900	6.8	42.9	< 0.50	< 0.50	< 0.50	< 0.50
PNR-RW-12	9/22/2011 13:45	14,500	6.5	42.7	< 0.50	< 0.50	< 0.50	< 0.50

Notes

< # = Analyte not detected, number shown is reporting limit

J = Estimated value. Present but less than the limit of quantitation.

nm = Not measured.

Appendix C

**Laboratory
Analytical Reports**

ANALYTICAL SUMMARY REPORT

September 27, 2011

Daniel B Stephens and Associates Inc
6020 Academy Rd NE Ste 100
Albuquerque, NM 87109-3315

Workorder No.: B11091989

Project Name: Biere 1-22 Well Site Project

Energy Laboratories Inc Billings MT received the following 10 samples for Daniel B Stephens and Associates Inc on 9/22/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B11091989-001	PNR-35-07	09/21/11 13:57	09/22/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B11091989-002	PNR-18	09/21/11 15:01	09/22/11	Aqueous	Same As Above
B11091989-003	PNR-13	09/21/11 10:28	09/22/11	Aqueous	Same As Above
B11091989-004	MOC-20B	09/21/11 16:03	09/22/11	Aqueous	Same As Above
B11091989-005	MOC-20B-DUP	09/21/11 16:03	09/22/11	Aqueous	Same As Above
B11091989-006	PNR-16	09/21/11 9:07	09/22/11	Aqueous	Same As Above
B11091989-007	PNR-23	09/21/11 11:40	09/22/11	Aqueous	Same As Above
B11091989-008	PNR-12	09/19/11 15:58	09/22/11	Aqueous	Same As Above
B11091989-009	USGS 92-12	09/18/11 18:02	09/22/11	Aqueous	Same As Above
B11091989-010	USGS 93-5	09/18/11 17:12	09/22/11	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091989-001
Client Sample ID PNR-35-07

Report Date: 09/27/11
Collection Date: 09/21/11 13:57
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3350	mg/L		10		A2540 C	09/23/11 14:48 / qed
INORGANICS							
Chloride	149	mg/L	D	5		E300.0	09/23/11 01:28 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091989-002
Client Sample ID PNR-18

Report Date: 09/27/11
Collection Date: 09/21/11 15:01
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3530	mg/L		10		A2540 C	09/23/11 14:50 / qed
INORGANICS							
Chloride	124	mg/L	D	5		E300.0	09/23/11 01:40 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091989-003
Client Sample ID PNR-13

Report Date: 09/27/11
Collection Date: 09/21/11 10:28
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	2900	mg/L		10		A2540 C	09/23/11 14:52 / qed
INORGANICS							
Chloride	134	mg/L	D	2		E300.0	09/23/11 01:52 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091989-004
Client Sample ID MOC-20B

Report Date: 09/27/11
Collection Date: 09/21/11 16:03
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3830	mg/L		10		A2540 C	09/23/11 14:55 / qed
INORGANICS							
Chloride	250	mg/L	D	5		E300.0	09/23/11 02:03 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091989-005
Client Sample ID MOC-20B-DUP

Report Date: 09/27/11
Collection Date: 09/21/11 16:03
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3960	mg/L		10		A2540 C	09/23/11 14:57 / qed
INORGANICS							
Chloride	247	mg/L	D	5		E300.0	09/23/11 02:15 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091989-006
Client Sample ID PNR-16

Report Date: 09/27/11
Collection Date: 09/21/11 09:07
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4690	mg/L		10		A2540 C	09/23/11 14:58 / qed
INORGANICS							
Chloride	17	mg/L	D	5		E300.0	09/23/11 02:27 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091989-007
Client Sample ID PNR-23

Report Date: 09/27/11
Collection Date: 09/21/11 11:40
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4830	mg/L		10		A2540 C	09/23/11 15:00 / qed
INORGANICS							
Chloride	1350	mg/L	D	10		E300.0	09/23/11 02:38 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091989-008
Client Sample ID PNR-12

Report Date: 09/27/11
Collection Date: 09/19/11 15:58
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4450	mg/L		10		A2540 C	09/23/11 15:01 / qed
INORGANICS							
Chloride	56	mg/L	D	5		E300.0	09/23/11 03:13 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091989-009
Client Sample ID USGS 92-12

Report Date: 09/27/11
Collection Date: 09/18/11 18:02
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	2760	mg/L		10		A2540 C	09/23/11 14:35 / qed
INORGANICS							
Chloride	2	mg/L		1		E300.0	09/23/11 16:50 / kh

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091989-010
Client Sample ID USGS 93-5

Report Date: 09/27/11
Collection Date: 09/18/11 17:12
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	16200	mg/L		10		A2540 C	09/23/11 15:05 / qed
INORGANICS							
Chloride	9140	mg/L	D	20		E300.0	09/23/11 03:59 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 09/27/11

Project: Biere 1-22 Well Site Project

Work Order: B11091989

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS110923A	
Sample ID: MBLK3		Method Blank				Run: BAL #11_110923A			09/23/11 14:29	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS3		Laboratory Control Sample				Run: BAL #11_110923A			09/23/11 14:32	
Solids, Total Dissolved TDS @ 180 C		1650	mg/L	10	99	90	110			
Sample ID: B11091989-009A MS		Sample Matrix Spike				Run: BAL #11_110923A			09/23/11 14:38	
Solids, Total Dissolved TDS @ 180 C		3900	mg/L	10	69	90	110			S
Sample ID: B11091989-008A DUP		Sample Duplicate				Run: BAL #11_110923A			09/23/11 15:02	
Solids, Total Dissolved TDS @ 180 C		4470	mg/L	10		90	110	0.6	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 09/27/11

Project: Biere 1-22 Well Site Project

Work Order: B11091989

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0										Analytical Run: IC202-B_110923A
Sample ID: ICV092311-11	Initial Calibration Verification Standard									09/23/11 10:45
Chloride		23.7	mg/L	1.0	95	90	110			
Method: E300.0										Batch: R173098
Sample ID: ICB092311-12	Method Blank									Run: IC202-B_110923A
Chloride		0.06	mg/L	0.01						09/23/11 10:55
Sample ID: LFB092311-13	Laboratory Fortified Blank									Run: IC202-B_110923A
Chloride		23.2	mg/L	1.0	92	90	110			09/23/11 11:06
Sample ID: B11091872-011AMS	Sample Matrix Spike									Run: IC202-B_110923A
Chloride		243	mg/L	2.6	96	90	110			09/23/11 16:09
Sample ID: B11091872-011AMSD	Sample Matrix Spike Duplicate									Run: IC202-B_110923A
Chloride		243	mg/L	2.6	96	90	110	0.2	20	09/23/11 16:19
Method: E300.0										Analytical Run: IC203-B_110922A
Sample ID: ICV092211-11	Initial Calibration Verification Standard									09/22/11 15:48
Chloride		24.5	mg/L	1.0	98	90	110			
Method: E300.0										Batch: R172993
Sample ID: ICB092211-12	Method Blank									Run: IC203-B_110922A
Chloride		ND	mg/L	0.05						09/22/11 16:00
Sample ID: LFB092211-13	Laboratory Fortified Blank									Run: IC203-B_110922A
Chloride		24.8	mg/L	1.0	99	90	110			09/22/11 16:11
Sample ID: B11091977-005AMS	Sample Matrix Spike									Run: IC203-B_110922A
Chloride		32.6	mg/L	1.0	107	90	110			09/23/11 00:42
Sample ID: B11091977-005AMSD	Sample Matrix Spike Duplicate									Run: IC203-B_110922A
Chloride		32.8	mg/L	1.0	108	90	110	0.7	20	09/23/11 00:54
Sample ID: B11091989-008AMS	Sample Matrix Spike									Run: IC203-B_110922A
Chloride		573	mg/L	5.4	103	90	110			09/23/11 03:25
Sample ID: B11091989-008AMSD	Sample Matrix Spike Duplicate									Run: IC203-B_110922A
Chloride		575	mg/L	5.4	104	90	110	0.4	20	09/23/11 03:36

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



Daniel B Stephens and Associates Inc

B11091989

Login completed by: Tabitha Edwards

Date Received: 9/22/2011

Reviewed by: BL2000\kmcDonald

Received by: tae

Reviewed Date: 9/23/2011

Carrier Return-UPS
name: Ground

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature:	1.8°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Contact and Corrective Action Comments:

None



Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT- Provide as much information as possible.

Company Name: Daniel B. Stephens & Associates (DBS&A)			Project Name, PWS, Permit, Etc. Biere 1-22 Well Site Project			Sample Origin State: MT		EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>											
Report Mail Address: DBS&A 12081 W. Alameda Pkwy, PMB 136 Lakewood, CO 80228-2701			Contact Name: Christa Tyrrell		Phone/Fax: 406-209-1905		Email: ctyrrell@dbstephens.com		Sampler: (Please Print) CT, TP, CM, GW, MU, C MJ, SS, GW										
Invoice Address: DBS&A 6020 Academy Rd NE, Ste 100, Albuquerque, NM 87109			Invoice Contact & Phone: Rita Gurule, DBS&A, 6020 Academy Rd NE, St 100 Albuquerque, NM 87109 tel: 505-353-9014			Purchase Order:		Quote/Bottle Order: 52500 52167											
Special Report/Formats -- ELI must be notified prior to sample submittal for the following: <input type="checkbox"/> DW <input type="checkbox"/> A2LA <input type="checkbox"/> GSA <input type="checkbox"/> EDD/EDT (Electronic Data) <input type="checkbox"/> POTW/WWTP <input type="checkbox"/> Format: _____ <input type="checkbox"/> State: _____ <input type="checkbox"/> LEVEL IV <input type="checkbox"/> Other: _____ <input type="checkbox"/> NELAC				Number of Containers Sample Type: AWSVB O Air Water Soils/Solids Vegetation Bioassay Other	ANALYSIS REQUESTED						SEE ATTACHED	Normal Turnaround (TAT)	R U S H	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page		Shipped by: UPS <i>Ship. W.S. Howard</i>			
														Comments:		Receipt Temp 1.8 °C		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)		Collection Date	Collection Time	MATRIX	TDS (A2540 C), CI (E300.0)	VOC-BTEX, TPH (SW8260B)													
1 PNR-35-07		9/21/11	13:57	W	✓								✓						
2 PNR-18		9/21/11	15:01	W	✓								✓						
3 PNR-13		9/21/11	10:28	W	✓								✓						
4 MOC-20B		9/21/11	16:03	W	✓								✓						
5 MOC-20B-DUP		9/21/11	16:03	W	✓								✓						
6 PNR-16		9/21/11	9:07	W	✓								✓						
7 PNR-23		9/21/11	11:40	W	✓								✓						
8 PNR-12		9/19/11	15:58	W	✓								✓						
9 USGS 92-12		9/18/11	18:02	W	✓								✓						
10 USGS 93-5		9/18/11	17:12	W	✓								✓						
Custody Record MUST be Signed		Relinquished by (print): C. Tyrrell		Date/Time: 9/21/11 17:22	Signature: <i>[Signature]</i>		Received by (print): EN ROUTE VIA UPS		Date/Time: 9/22/11 09:05		Signature: <i>[Signature]</i>								
		Relinquished by (print):		Date/Time:	Signature:		Received by (print):		Date/Time:		Signature:								
Sample Disposal:		Return to Client:		Lab Disposal:		Received by Laboratory:		Date/Time:		Signature:									

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

ANALYTICAL SUMMARY REPORT

September 27, 2011

Daniel B Stephens and Associates Inc
6020 Academy Rd NE Ste 100
Albuquerque, NM 87109-3315

Workorder No.: B11091997

Project Name: Biere 1-22 Well Site Project

Energy Laboratories Inc Billings MT received the following 10 samples for Daniel B Stephens and Associates Inc on 9/22/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B11091997-001	PNR-27-DUP	09/21/11 14:46	09/22/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B11091997-002	PNR-27	09/21/11 14:46	09/22/11	Aqueous	Same As Above
B11091997-003	PNR-39-08	09/21/11 12:05	09/22/11	Aqueous	Same As Above
B11091997-004	PNR-28	09/21/11 13:53	09/22/11	Aqueous	Same As Above
B11091997-005	M-27	09/21/11 9:14	09/22/11	Aqueous	Same As Above
B11091997-006	MOC-2	09/21/11 10:11	09/22/11	Aqueous	Same As Above
B11091997-007	M-18	09/20/11 17:00	09/22/11	Aqueous	Same As Above
B11091997-008	PNR-14	09/20/11 9:14	09/22/11	Aqueous	Same As Above
B11091997-009	PNR-9	09/20/11 10:54	09/22/11	Aqueous	Same As Above
B11091997-010	PNR-5	09/19/11 16:33	09/22/11	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091997-001
Client Sample ID PNR-27-DUP

Report Date: 09/27/11
Collection Date: 09/21/11 14:46
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	19900	mg/L		10		A2540 C	09/23/11 15:07 / qed
INORGANICS							
Chloride	9780	mg/L	D	50		E300.0	09/23/11 17:10 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091997-002
Client Sample ID PNR-27

Report Date: 09/27/11
Collection Date: 09/21/11 14:46
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	21000	mg/L		10		A2540 C	09/23/11 15:08 / qed
INORGANICS							
Chloride	10100	mg/L	D	50		E300.0	09/23/11 17:20 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091997-003
Client Sample ID PNR-39-08

Report Date: 09/27/11
Collection Date: 09/21/11 12:05
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	22500	mg/L		10		A2540 C	09/23/11 15:10 / qed
INORGANICS							
Chloride	9710	mg/L	D	20		E300.0	09/23/11 17:30 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091997-004
Client Sample ID PNR-28

Report Date: 09/27/11
Collection Date: 09/21/11 13:53
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	25900	mg/L		10		A2540 C	09/23/11 15:11 / qed
INORGANICS							
Chloride	11700	mg/L	D	50		E300.0	09/23/11 17:40 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091997-005
Client Sample ID M-27

Report Date: 09/27/11
Collection Date: 09/21/11 09:14
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	12300	mg/L		10		A2540 C	09/23/11 15:13 / qed
INORGANICS							
Chloride	6250	mg/L	D	20		E300.0	09/23/11 17:50 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091997-006
Client Sample ID MOC-2

Report Date: 09/27/11
Collection Date: 09/21/11 10:11
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	13300	mg/L		10		A2540 C	09/23/11 11:10 / qed
INORGANICS							
Chloride	6810	mg/L	D	20		E300.0	09/23/11 18:21 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091997-007
Client Sample ID M-18

Report Date: 09/27/11
Collection Date: 09/20/11 17:00
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	9710	mg/L		10		A2540 C	09/23/11 11:04 / qed
INORGANICS							
Chloride	5210	mg/L	D	20		E300.0	09/23/11 18:51 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091997-008
Client Sample ID PNR-14

Report Date: 09/27/11
Collection Date: 09/20/11 09:14
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	8270	mg/L		10		A2540 C	09/23/11 11:06 / qed
INORGANICS							
Chloride	3430	mg/L	D	20		E300.0	09/23/11 19:01 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091997-009
Client Sample ID PNR-9

Report Date: 09/27/11
Collection Date: 09/20/11 10:54
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	10300	mg/L		10		A2540 C	09/23/11 11:07 / qed
INORGANICS							
Chloride	5480	mg/L	D	20		E300.0	09/23/11 19:11 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091997-010
Client Sample ID PNR-5

Report Date: 09/27/11
Collection Date: 09/19/11 16:33
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	7950	mg/L		10		A2540 C	09/23/11 11:08 / qed
INORGANICS							
Chloride	3950	mg/L	D	20		E300.0	09/23/11 19:22 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 09/27/11

Project: Biere 1-22 Well Site Project

Work Order: B11091997

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C								Batch: TDS110923A		
Sample ID: MBLK1		Method Blank					Run: BAL #11_110923A			09/23/11 11:25
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS1		Laboratory Control Sample					Run: BAL #11_110923A			09/23/11 11:33
Solids, Total Dissolved TDS @ 180 C		1660	mg/L	10	99	90	110			
Sample ID: B11091821-001A MS		Sample Matrix Spike					Run: BAL #11_110923A			09/23/11 11:49
Solids, Total Dissolved TDS @ 180 C		1900	mg/L	10	98	90	110			
Sample ID: B11091593-003A DUP		Sample Duplicate					Run: BAL #11_110923A			09/23/11 11:54
Solids, Total Dissolved TDS @ 180 C		132	mg/L	10		90	110	2.4	5	
Method: A2540 C								Batch: TDS110923B		
Sample ID: MBLK4		Method Blank					Run: BAL #11_110923A			09/23/11 10:56
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS4		Laboratory Control Sample					Run: BAL #11_110923A			09/23/11 11:00
Solids, Total Dissolved TDS @ 180 C		1630	mg/L	10	98	90	110			
Sample ID: B11091998-002A MS		Sample Matrix Spike					Run: BAL #11_110923A			09/23/11 11:03
Solids, Total Dissolved TDS @ 180 C		2290	mg/L	10	93	90	110			
Sample ID: B11091997-007A DUP		Sample Duplicate					Run: BAL #11_110923A			09/23/11 11:05
Solids, Total Dissolved TDS @ 180 C		9970	mg/L	10		90	110	2.7	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 09/27/11

Project: Biere 1-22 Well Site Project

Work Order: B11091997

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC202-B_110923A	
Sample ID: ICV092311-11	Initial Calibration Verification Standard									09/23/11 10:45
Chloride		23.7	mg/L	1.0	95	90	110			
Method: E300.0									Batch: R173098	
Sample ID: ICB092311-12	Method Blank					Run: IC202-B_110923A			09/23/11 10:55	
Chloride		0.06	mg/L	0.01						
Sample ID: LFB092311-13	Laboratory Fortified Blank					Run: IC202-B_110923A			09/23/11 11:06	
Chloride		23.2	mg/L	1.0	92	90	110			
Sample ID: B11091872-011AMS	Sample Matrix Spike					Run: IC202-B_110923A			09/23/11 16:09	
Chloride		243	mg/L	2.6	96	90	110			
Sample ID: B11091872-011AMSD	Sample Matrix Spike Duplicate					Run: IC202-B_110923A			09/23/11 16:19	
Chloride		243	mg/L	2.6	96	90	110	0.2	20	
Sample ID: B11091997-006AMS	Sample Matrix Spike					Run: IC202-B_110923A			09/23/11 18:31	
Chloride		9290	mg/L	26	99	90	110			
Sample ID: B11091997-006AMSD	Sample Matrix Spike Duplicate					Run: IC202-B_110923A			09/23/11 18:41	
Chloride		9390	mg/L	26	103	90	110	1.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



Daniel B Stephens and Associates Inc

B11091997

Login completed by: Tabitha Edwards

Date Received: 9/22/2011

Reviewed by: BL2000\kmcDonald

Received by: tae

Reviewed Date: 9/23/2011

Carrier Return-UPS
name: Ground

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature:	3.6°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Contact and Corrective Action Comments:

None

ANALYTICAL SUMMARY REPORT

September 27, 2011

Daniel B Stephens and Associates Inc
6020 Academy Rd NE Ste 100
Albuquerque, NM 87109-3315

Workorder No.: B11091998

Project Name: Biere 1-22 Well Site Project

Energy Laboratories Inc Billings MT received the following 11 samples for Daniel B Stephens and Associates Inc on 9/22/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B11091998-001	MOC-1B	09/20/11 9:37	09/22/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B11091998-002	USGS06-11	09/18/11 16:04	09/22/11	Aqueous	Same As Above
B11091998-003	PNR-36-07	09/20/11 15:38	09/22/11	Aqueous	Same As Above
B11091998-004	MOC-3	09/19/11 15:04	09/22/11	Aqueous	Same As Above
B11091998-005	PNR-6	09/20/11 13:08	09/22/11	Aqueous	Same As Above
B11091998-006	PNR-29	09/20/11 10:31	09/22/11	Aqueous	Same As Above
B11091998-007	PNR-33-06	09/20/11 11:59	09/22/11	Aqueous	Same As Above
B11091998-008	USGS09-3	09/19/11 13:50	09/22/11	Aqueous	Same As Above
B11091998-009	USGS09-2	09/18/11 17:19	09/22/11	Aqueous	Same As Above
B11091998-010	USGS09-6	09/19/11 10:16	09/22/11	Aqueous	Same As Above
B11091998-011	USGS06-7	09/18/11 18:09	09/22/11	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-001
Client Sample ID MOC-1B

Report Date: 09/27/11
Collection Date: 09/20/11 09:37
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3590	mg/L		10		A2540 C	09/23/11 11:09 / qed
INORGANICS							
Chloride	54	mg/L	D	5		E300.0	09/23/11 19:32 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-002
Client Sample ID USGS06-11

Report Date: 09/27/11
Collection Date: 09/18/11 16:04
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	745	mg/L		10		A2540 C	09/23/11 11:01 / qed
INORGANICS							
Chloride	18	mg/L		1		E300.0	09/23/11 19:42 / kh

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-003
Client Sample ID PNR-36-07

Report Date: 09/27/11
Collection Date: 09/20/11 15:38
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	2950	mg/L		10		A2540 C	09/23/11 11:12 / qed
INORGANICS							
Chloride	55	mg/L	D	2		E300.0	09/23/11 19:52 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-004
Client Sample ID MOC-3

Report Date: 09/27/11
Collection Date: 09/19/11 15:04
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	2900	mg/L		10		A2540 C	09/23/11 11:13 / qed
INORGANICS							
Chloride	62	mg/L	D	2		E300.0	09/23/11 20:02 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-005
Client Sample ID PNR-6

Report Date: 09/27/11
Collection Date: 09/20/11 13:08
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5360	mg/L		10		A2540 C	09/23/11 11:14 / qed
INORGANICS							
Chloride	61	mg/L	D	5		E300.0	09/23/11 20:12 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-006
Client Sample ID PNR-29

Report Date: 09/27/11
Collection Date: 09/20/11 10:31
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4650	mg/L		10		A2540 C	09/23/11 11:15 / qed
INORGANICS							
Chloride	76	mg/L	D	5		E300.0	09/23/11 20:43 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-007
Client Sample ID PNR-33-06

Report Date: 09/27/11
Collection Date: 09/20/11 11:59
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4720	mg/L		10		A2540 C	09/23/11 11:18 / qed
INORGANICS							
Chloride	93	mg/L	D	5		E300.0	09/23/11 21:13 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-008
Client Sample ID USGS09-3

Report Date: 09/27/11
Collection Date: 09/19/11 13:50
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	1390	mg/L		10		A2540 C	09/23/11 11:21 / qed
INORGANICS							
Chloride	393	mg/L	D	2		E300.0	09/23/11 21:23 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-009
Client Sample ID USGS09-2

Report Date: 09/27/11
Collection Date: 09/18/11 17:19
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	1840	mg/L		10		A2540 C	09/23/11 11:23 / qed
INORGANICS							
Chloride	826	mg/L	D	2		E300.0	09/23/11 21:33 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-010
Client Sample ID USGS09-6

Report Date: 09/27/11
Collection Date: 09/19/11 10:16
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	14100	mg/L		10		A2540 C	09/23/11 11:32 / qed
INORGANICS							
Chloride	7990	mg/L	D	20		E300.0	09/23/11 21:43 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11091998-011
Client Sample ID USGS06-7

Report Date: 09/27/11
Collection Date: 09/18/11 18:09
DateReceived: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	748	mg/L		10		A2540 C	09/23/11 11:33 / qed
INORGANICS							
Chloride	19	mg/L		1		E300.0	09/23/11 21:53 / kh

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 09/27/11

Project: Biere 1-22 Well Site Project

Work Order: B11091998

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS110923B	
Sample ID: MBLK4		Method Blank					Run: BAL #11_110923A		09/23/11 10:56	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS4		Laboratory Control Sample					Run: BAL #11_110923A		09/23/11 11:00	
Solids, Total Dissolved TDS @ 180 C		1630	mg/L	10	98	90	110			
Sample ID: B11091998-002A MS		Sample Matrix Spike					Run: BAL #11_110923A		09/23/11 11:03	
Solids, Total Dissolved TDS @ 180 C		2290	mg/L	10	93	90	110			
Sample ID: B11091998-007A DUP		Sample Duplicate					Run: BAL #11_110923A		09/23/11 11:18	
Solids, Total Dissolved TDS @ 180 C		4630	mg/L	10		90	110	1.8	5	
Sample ID: MBLK5		Method Blank					Run: BAL #11_110923A		09/23/11 11:48	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS5		Laboratory Control Sample					Run: BAL #11_110923A		09/23/11 11:49	
Solids, Total Dissolved TDS @ 180 C		1640	mg/L	10	98	90	110			
Sample ID: B11092017-012A MS		Sample Matrix Spike					Run: BAL #11_110923A		09/23/11 11:52	
Solids, Total Dissolved TDS @ 180 C		2080	mg/L	10	94	90	110			
Sample ID: B11092017-013A DUP		Sample Duplicate					Run: BAL #11_110923A		09/23/11 11:53	
Solids, Total Dissolved TDS @ 180 C		303	mg/L	10		90	110	2.1	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 09/27/11

Project: Biere 1-22 Well Site Project

Work Order: B11091998

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC202-B_110923A	
Sample ID: ICV092311-11	Initial Calibration Verification Standard									09/23/11 10:45
Chloride		23.7	mg/L	1.0	95	90	110			
Method: E300.0									Batch: R173098	
Sample ID: ICB092311-12	Method Blank					Run: IC202-B_110923A			09/23/11 10:55	
Chloride		0.06	mg/L	0.01						
Sample ID: LFB092311-13	Laboratory Fortified Blank					Run: IC202-B_110923A			09/23/11 11:06	
Chloride		23.2	mg/L	1.0	92	90	110			
Sample ID: B11091997-006AMS	Sample Matrix Spike					Run: IC202-B_110923A			09/23/11 18:31	
Chloride		9290	mg/L	26	99	90	110			
Sample ID: B11091997-006AMSD	Sample Matrix Spike Duplicate					Run: IC202-B_110923A			09/23/11 18:41	
Chloride		9390	mg/L	26	103	90	110	1.0	20	
Sample ID: B11091998-006AMS	Sample Matrix Spike					Run: IC202-B_110923A			09/23/11 20:53	
Chloride		592	mg/L	5.3	103	90	110			
Sample ID: B11091998-006AMSD	Sample Matrix Spike Duplicate					Run: IC202-B_110923A			09/23/11 21:03	
Chloride		596	mg/L	5.3	104	90	110	0.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



Daniel B Stephens and Associates Inc

B11091998

Login completed by: Tabitha Edwards

Date Received: 9/22/2011

Reviewed by: BL2000\kmcDonald

Received by: tae

Reviewed Date: 9/23/2011

Carrier Return-UPS
name: Ground

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature:	4.8°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Contact and Corrective Action Comments:

None



Chain of Custody and Analytical Request Record

Page 1 of 2

PLEASE PRINT- Provide as much information as possible.

Company Name: Daniel B. Stephens & Associates (DBS&A)			Project Name, PWS, Permit, Etc. Biere 1-22 Well Site Project			Sample Origin State: MT		EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>													
Report Mail Address: DBS&A 12081 W. Alameda Pkwy, PMB 136 Lakewood, CO 80228-2701			Contact Name: Christa Tyrrell		Phone/Fax: 406-209-1905		Email: ctyrrell@dbstephens.com		Sampler: (Please Print) CT, TP, CM, GW, MU, MJ, SS, GW												
Invoice Address: DBS&A 6020 Academy Rd NE, Ste 100, Albuquerque, NM 87109			Invoice Contact & Phone: Rita Gurule, DBS&A, 6020 Academy Rd NE, St 100 Albuquerque, NM 87109 tel: 505-353-9014			Purchase Order:		Quote/Bottle Order: 52500 52167													
Special Report/Formats – ELI must be notified prior to sample submittal for the following: <input type="checkbox"/> DW <input type="checkbox"/> A2LA <input type="checkbox"/> GSA <input type="checkbox"/> EDD/EDT (Electronic Data) <input type="checkbox"/> POTW/WWTP <input type="checkbox"/> Format: _____ <input type="checkbox"/> State: _____ <input type="checkbox"/> LEVEL IV <input type="checkbox"/> Other: _____ <input type="checkbox"/> NELAC				Number of Containers Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other	ANALYSIS REQUESTED										SEE ATTACHED	Normal Turnaround (TAT)	R U S H	Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page		Shipped by: UPS <input checked="" type="checkbox"/> <i>Am. UPS Ground</i> 12 ERI 029 06 1091 949	
					Comments:		Receipt Temp 48 °C On ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal <input checked="" type="checkbox"/> Y Intact <input checked="" type="checkbox"/> Y Signature <input checked="" type="checkbox"/> Y Match <input checked="" type="checkbox"/> Y												
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)		Collection Date	Collection Time	MATRIX	TDS (A2540 C), Cl (E300.0)	VOC-BTEX, TPH (SW8260B)															
1 MOC-1B		9/20/11	9:37	W	✓										✓						
2 USGS06-11		9/18/11	16:04	W	✓										✓						
3 PNR-36-07		9/20/11	15:38	W	✓										✓						
4 MOC-3		9/19/11	15:04	W	✓										✓						
5 PNR-6		9/20/11	13:08	W	✓										✓						
6 PNR-29		9/20/11	10:31	W	✓										✓						
7 PNR-33-06		9/20/11	11:59	W	✓										✓						
8 USGS09-3		9/19/11	13:50	W	✓										✓						
9 USGS09-2		9/18/11	17:19	W	✓										✓						
10 USGS09-6		9/19/11	10:16	W	✓										✓						
Custody Record MUST be Signed		Relinquished by (print): C. Tyrrell		Date/Time: 9/21/11 17:35	Signature: <i>[Signature]</i>		Received by (print): FBI ROUTE VIA UPS		Date/Time: 9/21/11 0905	Signature: <i>[Signature]</i>		Received by Laboratory: 9/21/11 0905		Date/Time: 9/21/11 0905	Signature: <i>[Signature]</i>		LABORATORY USE ONLY 001 002 003 004 005 006 007 008 009 010				
		Relinquished by (print):		Date/Time:	Signature:		Received by (print):		Date/Time:	Signature:		Received by Laboratory:		Date/Time:	Signature:						
		Sample Disposal:		Return to Client:		Lab Disposal:															

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energielab.com for additional information, downloadable fee schedule, forms and links.



Chain of Custody and Analytical Request Record

Page 2 of 2

PLEASE PRINT - Provide as much information as possible.

Company Name: Daniel B. Stephens & Associates (DBS&A)			Project Name, PWS, Permit, Etc. Biere 1-22 Well Site Project			Sample Origin State: MT		EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>				
Report Mail Address: DBS&A 12081 W. Alameda Pkwy, PMB 136 Lakewood, CO 80228-2701			Contact Name: Christa Tyrrell		Phone/Fax: 406-209-1905		Email: ctyrrell@dbstephens.com		Sampler: (Please Print) CT, TP, CM, GW, MU, C MJ, SS, GW			
Invoice Address: DBS&A 6020 Academy Rd NE, Ste 100, Albuquerque, NM 87109			Invoice Contact & Phone: Rita Gurule, DBS&A, 6020 Academy Rd NE, St 100 Albuquerque, NM 87109 tel: 505-353-9014			Purchase Order:		Quote/Bottle Order: 52500 52167				
Special Report/Formats – ELI must be notified prior to sample submittal for the following: <input type="checkbox"/> DW <input type="checkbox"/> A2LA <input type="checkbox"/> GSA <input type="checkbox"/> EDD/EDT (Electronic Data) <input type="checkbox"/> POTW/WWTP <input type="checkbox"/> Format: _____ <input type="checkbox"/> State: _____ <input type="checkbox"/> LEVEL IV <input type="checkbox"/> Other: _____ <input type="checkbox"/> NELAC				ANALYSIS REQUESTED Number of Containers Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other TDS (A2540 C), CI (E300.0) VOC-BTEX, TPH (SW8260B) SEE ATTACHED Normal Turnaround (TAT) R U S H				Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page		Shipped by: UPS or		
								Comments:		Cooler (days): 12 ERI 029.06 10919619 Receipt Temp ____ °C On ice: Yes No Custody Seal Y Intact Y Signature Y Match Y		
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)		Collection Date	Collection Time	MATRIX								
1 USGS06-7		9/18/11	18:09	W	✓				✓			
2												
3												
4												
5												
6												
7												
8												
9												
10												
Custody Record MUST be Signed	Relinquished by (print): C. Tyrrell		Date/Time: 9/21/11 17:35		Signature: 		Received by (print): EN ROUTE VIA UPS		Date/Time: 9/21/11 0905		Signature: 	
	Relinquished by (print):		Date/Time:		Signature:		Received by (print):		Date/Time:		Signature:	
	Sample Disposal: Return to Client:		Lab Disposal:		Received by Laboratory:		Date/Time:		Signature:			

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.

This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ANALYTICAL SUMMARY REPORT

October 03, 2011

Daniel B Stephens and Associates Inc
6020 Academy Rd NE Ste 100
Albuquerque, NM 87109-3315

Workorder No.: B11092001

Project Name: Biere 1-22 Well Site Project

Energy Laboratories Inc Billings MT received the following 4 samples for Daniel B Stephens and Associates Inc on 9/22/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B11092001-001	M-60	09/19/11 15:06	09/22/11	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B11092001-002	M-28	09/19/11 11:36	09/22/11	Aqueous	Same As Above
B11092001-003	PNR-21	09/21/11 15:45	09/22/11	Aqueous	Same As Above
B11092001-004	TB 09-01-11 TS SHP0255	09/21/11 15:06	09/22/11	Trip Blank	8260-Volatile Organic Compounds-BTEX

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



CLIENT: Daniel B Stephens and Associates Inc

Project: Biere 1-22 Well Site Project

Sample Delivery Group: B11092001

Report Date: 10/03/11

CASE NARRATIVE

Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W Boxelder Rd, Gillette, WY, EPA Number WY00006.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092001-001
Client Sample ID M-60

Report Date: 10/03/11
Collection Date: 09/19/11 15:06
Date Received: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5330	mg/L		10		A2540 C	09/23/11 11:34 / qed
INORGANICS							
Chloride	2710	mg/L	D	10		E300.0	09/23/11 22:03 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/23/11 14:11 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/23/11 14:11 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/23/11 14:11 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/23/11 14:11 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/23/11 14:11 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/23/11 14:11 / jrj
Surr: 1,2-Dichloroethane-d4	94.0	%REC		70-130		SW8260B	09/23/11 14:11 / jrj
Surr: Dibromofluoromethane	112	%REC		77-126		SW8260B	09/23/11 14:11 / jrj
Surr: p-Bromofluorobenzene	103	%REC		76-127		SW8260B	09/23/11 14:11 / jrj
Surr: Toluene-d8	98.0	%REC		79-122		SW8260B	09/23/11 14:11 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	09/27/11 16:33 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092001-002
Client Sample ID M-28

Report Date: 10/03/11
Collection Date: 09/19/11 11:36
Date Received: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5990	mg/L		10		A2540 C	09/23/11 11:35 / qed
INORGANICS							
Chloride	1610	mg/L	D	10		E300.0	09/23/11 22:14 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/23/11 14:37 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/23/11 14:37 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/23/11 14:37 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/23/11 14:37 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/23/11 14:37 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/23/11 14:37 / jrj
Surr: 1,2-Dichloroethane-d4	98.0	%REC		70-130		SW8260B	09/23/11 14:37 / jrj
Surr: Dibromofluoromethane	114	%REC		77-126		SW8260B	09/23/11 14:37 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	09/23/11 14:37 / jrj
Surr: Toluene-d8	101	%REC		79-122		SW8260B	09/23/11 14:37 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	09/27/11 16:16 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092001-003
Client Sample ID PNR-21

Report Date: 10/03/11
Collection Date: 09/21/11 15:45
Date Received: 09/22/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	18100	mg/L		10		A2540 C	09/23/11 11:38 / qed
INORGANICS							
Chloride	10400	mg/L	D	50		E300.0	09/23/11 22:24 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		10		SW8260B	09/23/11 19:01 / jrj
Ethylbenzene	ND	ug/L		10		SW8260B	09/23/11 19:01 / jrj
Toluene	ND	ug/L		10		SW8260B	09/23/11 19:01 / jrj
m+p-Xylenes	ND	ug/L		10		SW8260B	09/23/11 19:01 / jrj
o-Xylene	ND	ug/L		10		SW8260B	09/23/11 19:01 / jrj
Xylenes, Total	ND	ug/L		10		SW8260B	09/23/11 19:01 / jrj
Surr: 1,2-Dichloroethane-d4	102	%REC		70-130		SW8260B	09/23/11 19:01 / jrj
Surr: Dibromofluoromethane	117	%REC		77-126		SW8260B	09/23/11 19:01 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	09/23/11 19:01 / jrj
Surr: Toluene-d8	98.0	%REC		79-122		SW8260B	09/23/11 19:01 / jrj
- The reporting limit reflects a 20 times dilution. The sample was diluted due to foaming.							
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	1	mg/L		1		E1664A	09/27/11 16:35 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092001-004
Client Sample ID TB 09-01-11 TS SHP0255

Report Date: 10/03/11
Collection Date: 09/21/11 15:06
DateReceived: 09/22/11
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/23/11 11:33 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/23/11 11:33 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/23/11 11:33 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/23/11 11:33 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/23/11 11:33 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/23/11 11:33 / jrj
Surr: 1,2-Dichloroethane-d4	96.0	%REC		70-130		SW8260B	09/23/11 11:33 / jrj
Surr: Dibromofluoromethane	110	%REC		77-126		SW8260B	09/23/11 11:33 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	09/23/11 11:33 / jrj
Surr: Toluene-d8	103	%REC		79-122		SW8260B	09/23/11 11:33 / jrj

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 10/03/11

Project: Biere 1-22 Well Site Project

Work Order: B11092001

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS110923B	
Sample ID: MBLK4		Method Blank				Run: BAL #11_110923A			09/23/11 10:56	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS4		Laboratory Control Sample				Run: BAL #11_110923A			09/23/11 11:00	
Solids, Total Dissolved TDS @ 180 C		1630	mg/L	10	98	90	110			
Sample ID: B11092017-012A MS		Sample Matrix Spike				Run: BAL #11_110923A			09/23/11 11:52	
Solids, Total Dissolved TDS @ 180 C		2080	mg/L	10	94	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 10/03/11

Project: Biere 1-22 Well Site Project

Work Order: B11092001

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A								Batch: G_TPH110927B		
Sample ID: B11092184-001A	Sample Matrix Spike					Run: SUB-G189058		09/27/11 16:13		
Total Petroleum Hydrocarbons	18	mg/L		1.0	83	64	132			
Sample ID: G11090693-003EMS	Sample Matrix Spike					Run: SUB-G189058		09/27/11 16:11		
Total Petroleum Hydrocarbons	18	mg/L		1.0	84	64	132			
Sample ID: LCSD1109270000	Laboratory Control Sample Duplicate					Run: SUB-G189058		09/27/11 15:50		
Total Petroleum Hydrocarbons	15	mg/L		1.0	74	64	132	11	34	
Sample ID: LCS1109270000	Laboratory Control Sample					Run: SUB-G189058		09/27/11 15:49		
Total Petroleum Hydrocarbons	13	mg/L		1.0	66	64	132			
Sample ID: MBLK1109270000	Method Blank					Run: SUB-G189058		09/27/11 15:46		
Total Petroleum Hydrocarbons	ND	mg/L		0.6						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 10/03/11

Project: Biere 1-22 Well Site Project

Work Order: B11092001

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: IC202-B_110923A		
Sample ID: ICV092311-11	Initial Calibration Verification Standard									09/23/11 10:45
Chloride		23.7	mg/L	1.0	95	90	110			
Method: E300.0								Batch: R173098		
Sample ID: ICB092311-12	Method Blank					Run: IC202-B_110923A			09/23/11 10:55	
Chloride		0.06	mg/L	0.01						
Sample ID: LFB092311-13	Laboratory Fortified Blank					Run: IC202-B_110923A			09/23/11 11:06	
Chloride		23.2	mg/L	1.0	92	90	110			
Sample ID: B11091998-006AMS	Sample Matrix Spike					Run: IC202-B_110923A			09/23/11 20:53	
Chloride		592	mg/L	5.3	103	90	110			
Sample ID: B11091998-006AMSD	Sample Matrix Spike Duplicate					Run: IC202-B_110923A			09/23/11 21:03	
Chloride		596	mg/L	5.3	104	90	110	0.7	20	
Sample ID: B11092017-002AMS	Sample Matrix Spike					Run: IC202-B_110923A			09/23/11 23:14	
Chloride		34.9	mg/L	1.0	110	90	110			
Sample ID: B11092017-002AMSD	Sample Matrix Spike Duplicate					Run: IC202-B_110923A			09/23/11 23:24	
Chloride		35.3	mg/L	1.0	111	90	110	1.0	20	S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 10/03/11

Project: Biere 1-22 Well Site Project

Work Order: B11092001

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R173086
Sample ID: lcs092311	9	Laboratory Control Sample				Run: CS5972A.I_110923A				09/23/11 10:15
Benzene		5.44	ug/L	1.0	109	71	133			
Ethylbenzene		5.64	ug/L	1.0	113	78	131			
Toluene		5.64	ug/L	1.0	113	78	134			
m+p-Xylenes		11.0	ug/L	1.0	110	78	133			
o-Xylene		5.56	ug/L	1.0	111	79	136			
Surr: 1,2-Dichloroethane-d4				1.0	88	70	130			
Surr: Dibromofluoromethane				1.0	103	77	126			
Surr: p-Bromofluorobenzene				1.0	103	76	127			
Surr: Toluene-d8				1.0	103	79	122			
Sample ID: blk092311	10	Method Blank				Run: CS5972A.I_110923A				09/23/11 11:07
Benzene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	92	70	130			
Surr: Dibromofluoromethane				1.0	109	77	126			
Surr: p-Bromofluorobenzene				1.0	104	76	127			
Surr: Toluene-d8				1.0	100	79	122			
Sample ID: b11091895-001bmsd	9	Sample Matrix Spike				Run: CS5972A.I_110923A				09/23/11 12:52
Benzene		5.28	ug/L	1.0	106	71	133			
Ethylbenzene		5.24	ug/L	1.0	105	78	131			
Toluene		5.20	ug/L	1.0	104	78	134			
m+p-Xylenes		10.4	ug/L	1.0	104	78	133			
o-Xylene		5.28	ug/L	1.0	106	79	136			
Surr: 1,2-Dichloroethane-d4				1.0	101	70	130			
Surr: Dibromofluoromethane				1.0	106	77	126			
Surr: p-Bromofluorobenzene				1.0	106	76	127			
Surr: Toluene-d8				1.0	102	79	122			
Sample ID: b11091895-001bmsd	9	Sample Matrix Spike Duplicate				Run: CS5972A.I_110923A				09/23/11 13:19
Benzene		5.04	ug/L	1.0	101	71	133	4.7	20	
Ethylbenzene		5.12	ug/L	1.0	102	78	131	2.3	20	
Toluene		5.16	ug/L	1.0	103	78	134	0.8	20	
m+p-Xylenes		10.3	ug/L	1.0	103	78	133	1.2	20	
o-Xylene		5.12	ug/L	1.0	102	79	136	3.1	20	
Surr: 1,2-Dichloroethane-d4				1.0	101	70	130			
Surr: Dibromofluoromethane				1.0	105	77	126			
Surr: p-Bromofluorobenzene				1.0	106	76	127			
Surr: Toluene-d8				1.0	102	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



Daniel B Stephens and Associates Inc

B11092001

Login completed by: Tabitha Edwards

Date Received: 9/22/2011

Reviewed by: BL2000\kmcDonald

Received by: tae

Reviewed Date: 9/23/2011

Carrier Return-UPS
name: Ground

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature:	1.8°C On Ice		
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Contact and Corrective Action Comments:

None



Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT - Provide as much information as possible.

Company Name: Daniel B. Stephens & Associates (DBS&A)	Project Name, PWS, Permit, Etc. Biere 1-22 Well Site Project	Sample Origin State: MT	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: DBS&A 12081 W. Alameda Pkwy, PMB 136 Lakewood, CO 80228-2701	Contact Name: Christa Tyrrell	Phone/Fax: 406-209-1905	Email: ctyrrell@dbstephens.com
Invoice Address: DBS&A 6020 Academy Rd NE, Ste 100, Albuquerque, NM 87109	Invoice Contact & Phone: Rita Gurule, DBS&A, 6020 Academy Rd NE, St 100 Albuquerque, NM 87109 tel: 505-353-9014	Purchase Order:	Quote/Bottle Order: 59167 59167

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> DW | <input type="checkbox"/> A2LA |
| <input type="checkbox"/> GSA | <input type="checkbox"/> EDD/EDT (Electronic Data) |
| <input type="checkbox"/> POTW/WWTP | Format: _____ |
| <input type="checkbox"/> State: _____ | <input type="checkbox"/> LEVEL IV |
| <input type="checkbox"/> Other: _____ | <input type="checkbox"/> NELAC |

Number of Containers
Sample Type: A W S V B O
Air Water Soils/Solids
Vegetation Bioassay Other

ANALYSIS REQUESTED

SEE ATTACHED

Normal Turnaround (TAT)

R
U
S
H

Contact ELI prior to RUSH sample submittal for charges and scheduling – See instruction Page

Comments:

Shipped by: UPS

ATM-UPS Ground

Cooler (Lbs):

12 EQ 029 06

1091 9628

Receipt Temp

1.8 °C

On ice:

Yes ☒ No ☐

Custody Seal

Intact

Signature

Match

Y

B11092001-001

002

003

004

LABORATORY USE ONLY

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	TDS (A2540 C), Cl (E300.0)	VOC-BTEX, TPH (SW8260B)															
1 M-60	9/19/11	15:06	W	✓	✓															
2 M-28	9/19/11	11:36	W	✓	✓															
3 PNR-21	9/21/11	15:45	W	✓	✓															
4 TB 09-01-11 TS SHP0255																				
5																				
6																				
7																				
8																				
9																				
10																				

Custody
Record
MUST be
Signed

Relinquished by (print): _____ Date/Time: _____ Signature: _____

C. Tyrrell 9/21/11 16:54 [Signature]

Relinquished by (print): _____ Date/Time: _____ Signature: _____

Received by (print): _____ Date/Time: _____ Signature: _____

EN ROUTE UPS

Received by (print): _____ Date/Time: _____ Signature: _____

Sample Disposal: Return to Client: _____ Lab Disposal: _____

Received by Laboratory: _____ Date/Time: _____ Signature: _____

9/22/11 0905 [Signature]

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ANALYTICAL SUMMARY REPORT

October 17, 2011

Daniel B Stephens and Associates Inc

6020 Academy Rd NE Ste 100

Albuquerque, NM 87109-3315

Workorder No.: B11092278

Project Name: Biere 1-22 Well Site Project

Energy Laboratories Inc Billings MT received the following 34 samples for Daniel B Stephens and Associates Inc on 9/26/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B11092278-001	PNR-RW-11	09/23/11 11:13	09/26/11	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B11092278-002	PNR-RW-9	09/23/11 11:30	09/26/11	Aqueous	Same As Above
B11092278-003	PNR-RW-1	09/22/11 10:05	09/26/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B11092278-004	PNR-RW-1	09/23/11 10:15	09/26/11	Aqueous	Hydrocarbons, Total Petroleum
B11092278-005	MOC-4	09/23/11 12:13	09/26/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B11092278-006	PNR-34-07	09/22/11 14:46	09/26/11	Aqueous	Same As Above
B11092278-007	MOC-20A	09/23/11 10:37	09/26/11	Aqueous	Same As Above
B11092278-008	PNR-RW-12	09/22/11 13:45	09/26/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B11092278-009	PNR-RW-12	09/23/11 11:53	09/26/11	Aqueous	Hydrocarbons, Total Petroleum
B11092278-010	PNR-RW-5	09/22/11 11:35	09/26/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B11092278-011	PNR-RW-5	09/23/11 10:40	09/26/11	Aqueous	Hydrocarbons, Total Petroleum
B11092278-012	PNR-RW-6	09/22/11 13:30	09/26/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B11092278-013	PNR-7-DUP	09/23/11 9:46	09/26/11	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B11092278-014	PNR-7	09/23/11 9:46	09/26/11	Aqueous	Same As Above
B11092278-015	PNR-RW-2	09/22/11 10:25	09/26/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX

ANALYTICAL SUMMARY REPORT

B11092278-016	PNR-RW-2	09/23/11 10:20 09/26/11	Aqueous	Hydrocarbons, Total Petroleum
B11092278-017	PNR-8	09/23/11 11:13 09/26/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B11092278-018	USGS93-3	09/22/11 16:38 09/26/11	Aqueous	Same As Above
B11092278-019	PNR-22	09/22/11 10:55 09/26/11	Aqueous	Same As Above
B11092278-020	M-31	09/22/11 13:47 09/26/11	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds- BTEX
B11092278-021	PNR-RW-4	09/22/11 11:20 09/26/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds- BTEX
B11092278-022	PNR-RW-4	09/23/11 10:35 09/26/11	Aqueous	Hydrocarbons, Total Petroleum
B11092278-023	PNR-RW-3	09/22/11 10:40 09/26/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds- BTEX
B11092278-024	PNR-RW-3	09/23/11 10:27 09/26/11	Aqueous	Hydrocarbons, Total Petroleum
B11092278-025	PNR-23	09/23/11 10:43 09/26/11	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds- BTEX
B11092278-026	PNR-20	09/22/11 11:17 09/26/11	Aqueous	Same As Above
B11092278-027	PNR-19	09/22/11 10:26 09/26/11	Aqueous	Same As Above
B11092278-028	PNR-38-08	09/22/11 9:52 09/26/11	Aqueous	Anions by Ion Chromatography Solids, Total Dissolved
B11092278-029	PNR-38-08-DUP	09/22/11 9:52 09/26/11	Aqueous	Same As Above
B11092278-030	PNR-10	09/22/11 12:09 09/26/11	Aqueous	Same As Above
B11092278-031	Trip Blank, TB090111B- TS SHP0255 #1	09/22/11 10:05 09/26/11	Trip Blank	8260-Volatile Organic Compounds- BTEX
B11092278-032	Trip Blank, TB091611B- KR SHP0255, #2	09/22/11 10:05 09/26/11	Trip Blank	Same As Above
B11092278-033	Trip Blank, TB090111B- TS SHP0255, #3	09/22/11 10:05 09/26/11	Trip Blank	Same As Above
B11092278-034	Trip Blank, TB090111B- TS SHP0255, #4	09/22/11 10:05 09/26/11	Trip Blank	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



CLIENT: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Sample Delivery Group: B11092278

Revised Date: 10/17/11

Report Date: 10/12/11

CASE NARRATIVE

Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W Boxelder Rd, Gillette, WY, EPA Number WY00006.

A rerun was requested for Chloride on sample PNR-RW-4 (B11092278-021) on 10/14/11.

Before re-analysis bottle identifications were verified.

A result of 1230 mg/L was originally reported, from an analytical run on 9/27/11.

The sample was re-analyzed on 10/14/11 with a result of 11400 mg/L.

Because this did not match the original result, the sample was analyzed a third time with a result of 11400 mg/L.

It is believed the original result was due to laboratory error. We apologize for any inconvenience this may have caused.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-001
Client Sample ID PNR-RW-11

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 11:13
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	31600	mg/L		10		A2540 C	09/27/11 13:56 / jlw
INORGANICS							
Chloride	19100	mg/L	D	50		E300.0	09/27/11 01:15 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	8.9	ug/L		1.0		SW8260B	09/26/11 14:26 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 14:26 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 14:26 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 14:26 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 14:26 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 14:26 / jrj
Surr: 1,2-Dichloroethane-d4	107	%REC		70-130		SW8260B	09/26/11 14:26 / jrj
Surr: Dibromofluoromethane	104	%REC		77-126		SW8260B	09/26/11 14:26 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	09/26/11 14:26 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	09/26/11 14:26 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	09/29/11 13:20 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-002
Client Sample ID PNR-RW-9

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 11:30
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	15300	mg/L		10		A2540 C	09/27/11 13:57 / jlw
INORGANICS							
Chloride	8650	mg/L	D	20		E300.0	09/27/11 01:26 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.46	ug/L	J	1.0		SW8260B	09/26/11 14:54 / jrj
Ethylbenzene	2.5	ug/L		1.0		SW8260B	09/26/11 14:54 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 14:54 / jrj
m+p-Xylenes	1.2	ug/L		1.0		SW8260B	09/26/11 14:54 / jrj
o-Xylene	0.17	ug/L	J	1.0		SW8260B	09/26/11 14:54 / jrj
Xylenes, Total	1.3	ug/L		1.0		SW8260B	09/26/11 14:54 / jrj
Surr: 1,2-Dichloroethane-d4	102	%REC		70-130		SW8260B	09/26/11 14:54 / jrj
Surr: Dibromofluoromethane	101	%REC		77-126		SW8260B	09/26/11 14:54 / jrj
Surr: p-Bromofluorobenzene	103	%REC		76-127		SW8260B	09/26/11 14:54 / jrj
Surr: Toluene-d8	111	%REC		79-122		SW8260B	09/26/11 14:54 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	09/29/11 13:31 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-003
Client Sample ID PNR-RW-1

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 10:05
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	30100	mg/L		10		A2540 C	09/27/11 13:59 / jlw
INORGANICS							
Chloride	17900	mg/L	D	50		E300.0	09/27/11 01:38 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	11	ug/L		1.0		SW8260B	09/26/11 15:22 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 15:22 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 15:22 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 15:22 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 15:22 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 15:22 / jrj
Surr: 1,2-Dichloroethane-d4	106	%REC		70-130		SW8260B	09/26/11 15:22 / jrj
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	09/26/11 15:22 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	09/26/11 15:22 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	09/26/11 15:22 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-004
Client Sample ID PNR-RW-1

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 10:15
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	09/29/11 13:32 / eli-g

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-005
Client Sample ID MOC-4

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 12:13
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5220	mg/L		10		A2540 C	09/27/11 14:01 / jlw
INORGANICS							
Chloride	2460	mg/L	D	10		E300.0	09/27/11 01:50 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-006
Client Sample ID PNR-34-07

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 14:46
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	22800	mg/L		10		A2540 C	09/27/11 14:03 / jlw
INORGANICS							
Chloride	13100	mg/L	D	50		E300.0	09/27/11 02:01 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-007
Client Sample ID MOC-20A

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 10:37
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5390	mg/L		10		A2540 C	09/27/11 14:05 / jlw
INORGANICS							
Chloride	150	mg/L	D	5		E300.0	09/27/11 02:13 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-008
Client Sample ID PNR-RW-12

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 13:45
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	26500	mg/L		10		A2540 C	09/27/11 14:06 / jlw
INORGANICS							
Chloride	14500	mg/L	D	50		E300.0	09/27/11 02:25 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/26/11 15:50 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 15:50 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 15:50 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 15:50 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 15:50 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 15:50 / jrj
Surr: 1,2-Dichloroethane-d4	106	%REC		70-130		SW8260B	09/26/11 15:50 / jrj
Surr: Dibromofluoromethane	100	%REC		77-126		SW8260B	09/26/11 15:50 / jrj
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	09/26/11 15:50 / jrj
Surr: Toluene-d8	108	%REC		79-122		SW8260B	09/26/11 15:50 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-009
Client Sample ID PNR-RW-12

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 11:53
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	09/29/11 12:50 / eli-g

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-010
Client Sample ID PNR-RW-5

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 11:35
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	17300	mg/L		10		A2540 C	09/27/11 14:08 / jlw
INORGANICS							
Chloride	9120	mg/L	D	20		E300.0	09/27/11 02:36 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	2.4	ug/L		1.0		SW8260B	09/26/11 16:18 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 16:18 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 16:18 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 16:18 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 16:18 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 16:18 / jrj
Surr: 1,2-Dichloroethane-d4	102	%REC		70-130		SW8260B	09/26/11 16:18 / jrj
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	09/26/11 16:18 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	09/26/11 16:18 / jrj
Surr: Toluene-d8	109	%REC		79-122		SW8260B	09/26/11 16:18 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-011
Client Sample ID PNR-RW-5

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 10:40
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	09/29/11 13:22 / eli-g

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-012
Client Sample ID PNR-RW-6

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 13:30
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	25900	mg/L		10		A2540 C	09/27/11 14:10 / jlw
INORGANICS							
Chloride	13800	mg/L	D	50		E300.0	09/27/11 03:11 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/26/11 16:46 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 16:46 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 16:46 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 16:46 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 16:46 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 16:46 / jrj
Surr: 1,2-Dichloroethane-d4	106	%REC		70-130		SW8260B	09/26/11 16:46 / jrj
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	09/26/11 16:46 / jrj
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	09/26/11 16:46 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	09/26/11 16:46 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-013
Client Sample ID PNR-7-DUP

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 09:46
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	45300	mg/L		10		A2540 C	09/27/11 14:11 / jlw
INORGANICS							
Chloride	27800	mg/L	D	100		E300.0	09/28/11 12:30 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	32	ug/L		5.0		SW8260B	09/27/11 02:14 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 17:15 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 17:15 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 17:15 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 17:15 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 17:15 / jrj
Surr: 1,2-Dichloroethane-d4	106	%REC		70-130		SW8260B	09/26/11 17:15 / jrj
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	09/26/11 17:15 / jrj
Surr: p-Bromofluorobenzene	106	%REC		76-127		SW8260B	09/26/11 17:15 / jrj
Surr: Toluene-d8	107	%REC		79-122		SW8260B	09/26/11 17:15 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	09/29/11 12:54 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-014
Client Sample ID PNR-7

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 09:46
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	46900	mg/L		10		A2540 C	09/27/11 17:21 / jlw
INORGANICS							
Chloride	27700	mg/L	D	100		E300.0	09/28/11 12:40 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	31	ug/L		5.0		SW8260B	09/27/11 02:42 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 17:43 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 17:43 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 17:43 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 17:43 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 17:43 / jrj
Surr: 1,2-Dichloroethane-d4	109	%REC		70-130		SW8260B	09/26/11 17:43 / jrj
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	09/26/11 17:43 / jrj
Surr: p-Bromofluorobenzene	103	%REC		76-127		SW8260B	09/26/11 17:43 / jrj
Surr: Toluene-d8	108	%REC		79-122		SW8260B	09/26/11 17:43 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	09/29/11 13:23 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-015
Client Sample ID PNR-RW-2

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 10:25
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	26700	mg/L		10		A2540 C	09/27/11 17:23 / jlw
INORGANICS							
Chloride	15600	mg/L	D	50		E300.0	09/27/11 04:09 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	10	ug/L		1.0		SW8260B	09/26/11 18:11 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 18:11 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 18:11 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 18:11 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 18:11 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 18:11 / jrj
Surr: 1,2-Dichloroethane-d4	106	%REC		70-130		SW8260B	09/26/11 18:11 / jrj
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	09/26/11 18:11 / jrj
Surr: p-Bromofluorobenzene	103	%REC		76-127		SW8260B	09/26/11 18:11 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	09/26/11 18:11 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-016
Client Sample ID PNR-RW-2

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 10:20
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	09/29/11 12:45 / eli-g

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-017
Client Sample ID PNR-8

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 11:13
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	6500	mg/L		10		A2540 C	09/27/11 17:24 / jlw
INORGANICS							
Chloride	2910	mg/L	D	10		E300.0	09/27/11 12:34 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-018
Client Sample ID USGS93-3

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 16:38
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	17200	mg/L		10		A2540 C	09/27/11 17:08 / jlw
INORGANICS							
Chloride	10800	mg/L	D	50		E300.0	09/27/11 13:05 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-019
Client Sample ID PNR-22

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 10:55
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3650	mg/L		10		A2540 C	09/27/11 18:20 / jlw
INORGANICS							
Chloride	613	mg/L	D	5		E300.0	09/27/11 13:35 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-020
Client Sample ID M-31

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 13:47
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	52600	mg/L		10		A2540 C	09/27/11 18:04 / jlw
INORGANICS							
Chloride	34500	mg/L	D	100		E300.0	09/27/11 13:45 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	26	ug/L		5.0		SW8260B	09/27/11 09:44 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 18:39 / jrj
Toluene	0.26	ug/L	J	1.0		SW8260B	09/26/11 18:39 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 18:39 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 18:39 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 18:39 / jrj
Surr: 1,2-Dichloroethane-d4	109	%REC		70-130		SW8260B	09/26/11 18:39 / jrj
Surr: Dibromofluoromethane	104	%REC		77-126		SW8260B	09/26/11 18:39 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	09/26/11 18:39 / jrj
Surr: Toluene-d8	105	%REC		79-122		SW8260B	09/26/11 18:39 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	09/29/11 13:12 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-021
Client Sample ID PNR-RW-4

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 11:20
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	18000	mg/L		10		A2540 C	09/27/11 18:06 / jlw
INORGANICS							
Chloride	11400	mg/L	D	50		E300.0	10/14/11 12:14 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	2.0	ug/L		1.0		SW8260B	09/26/11 19:07 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 19:07 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 19:07 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 19:07 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 19:07 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 19:07 / jrj
Surr: 1,2-Dichloroethane-d4	105	%REC		70-130		SW8260B	09/26/11 19:07 / jrj
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	09/26/11 19:07 / jrj
Surr: p-Bromofluorobenzene	107	%REC		76-127		SW8260B	09/26/11 19:07 / jrj
Surr: Toluene-d8	111	%REC		79-122		SW8260B	09/26/11 19:07 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-022
Client Sample ID PNR-RW-4

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 10:35
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	10/05/11 16:50 / eli-g

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-023
Client Sample ID PNR-RW-3

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 10:40
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	34400	mg/L		10		A2540 C	09/27/11 18:07 / jlw
INORGANICS							
Chloride	21100	mg/L	D	100		E300.0	09/28/11 12:50 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	9.9	ug/L		1.0		SW8260B	09/26/11 19:35 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 19:35 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 19:35 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 19:35 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 19:35 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 19:35 / jrj
Surr: 1,2-Dichloroethane-d4	108	%REC		70-130		SW8260B	09/26/11 19:35 / jrj
Surr: Dibromofluoromethane	103	%REC		77-126		SW8260B	09/26/11 19:35 / jrj
Surr: p-Bromofluorobenzene	103	%REC		76-127		SW8260B	09/26/11 19:35 / jrj
Surr: Toluene-d8	109	%REC		79-122		SW8260B	09/26/11 19:35 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-024
Client Sample ID PNR-RW-3

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 10:27
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	10/05/11 16:48 / eli-g

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-025
Client Sample ID PNR-23

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/23/11 10:43
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4870	mg/L		10		A2540 C	09/27/11 18:09 / jlw
INORGANICS							
Chloride	1310	mg/L	D	10		E300.0	09/27/11 14:16 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.23	ug/L	J	1.0		SW8260B	09/26/11 20:03 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 20:03 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 20:03 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 20:03 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 20:03 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 20:03 / jrj
Surr: 1,2-Dichloroethane-d4	99.0	%REC		70-130		SW8260B	09/26/11 20:03 / jrj
Surr: Dibromofluoromethane	100	%REC		77-126		SW8260B	09/26/11 20:03 / jrj
Surr: p-Bromofluorobenzene	106	%REC		76-127		SW8260B	09/26/11 20:03 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	09/26/11 20:03 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	10/05/11 16:46 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-026
Client Sample ID PNR-20

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 11:17
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	28800	mg/L		10		A2540 C	09/27/11 18:10 / jlw
INORGANICS							
Chloride	16000	mg/L	D	50		E300.0	09/27/11 14:26 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	10	ug/L		1.0		SW8260B	09/26/11 20:31 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 20:31 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 20:31 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 20:31 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 20:31 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 20:31 / jrj
Surr: 1,2-Dichloroethane-d4	105	%REC		70-130		SW8260B	09/26/11 20:31 / jrj
Surr: Dibromofluoromethane	103	%REC		77-126		SW8260B	09/26/11 20:31 / jrj
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	09/26/11 20:31 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	09/26/11 20:31 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	10/05/11 16:56 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-027
Client Sample ID PNR-19

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 10:26
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	3390	mg/L		10		A2540 C	09/27/11 18:12 / jlw
INORGANICS							
Chloride	1120	mg/L	D	5		E300.0	09/27/11 14:36 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.20	ug/L	J	1.0		SW8260B	09/26/11 21:00 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 21:00 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 21:00 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 21:00 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 21:00 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 21:00 / jrj
Surr: 1,2-Dichloroethane-d4	99.0	%REC		70-130		SW8260B	09/26/11 21:00 / jrj
Surr: Dibromofluoromethane	101	%REC		77-126		SW8260B	09/26/11 21:00 / jrj
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	09/26/11 21:00 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	09/26/11 21:00 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		5		E1664A	10/05/11 16:42 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-028
Client Sample ID PNR-38-08

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 09:52
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5150	mg/L		10		A2540 C	09/27/11 18:13 / jlw
INORGANICS							
Chloride	1660	mg/L	D	5		E300.0	09/27/11 14:46 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-029
Client Sample ID PNR-38-08-DUP

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 09:52
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4980	mg/L		10		A2540 C	09/27/11 18:14 / jlw
INORGANICS							
Chloride	1680	mg/L	D	5		E300.0	09/27/11 14:56 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-030
Client Sample ID PNR-10

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 12:09
DateReceived: 09/26/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	5270	mg/L		10		A2540 C	09/27/11 18:16 / jlw
INORGANICS							
Chloride	1600	mg/L	D	5		E300.0	09/27/11 15:26 / kh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-031
Client Sample ID Trip Blank, TB090111B-TS SHP0255 #1

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 10:05
DateReceived: 09/26/11
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/26/11 21:32 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 21:32 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 21:32 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 21:32 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 21:32 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 21:32 / jrj
Surr: 1,2-Dichloroethane-d4	100	%REC		70-130		SW8260B	09/26/11 21:32 / jrj
Surr: Dibromofluoromethane	100	%REC		77-126		SW8260B	09/26/11 21:32 / jrj
Surr: p-Bromofluorobenzene	102	%REC		76-127		SW8260B	09/26/11 21:32 / jrj
Surr: Toluene-d8	109	%REC		79-122		SW8260B	09/26/11 21:32 / jrj

Report
Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-032
Client Sample ID Trip Blank, TB091611B-KR SHP0255, #2

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 10:05
DateReceived: 09/26/11
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/26/11 22:01 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/26/11 22:01 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/26/11 22:01 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/26/11 22:01 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/26/11 22:01 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/26/11 22:01 / jrj
Surr: 1,2-Dichloroethane-d4	96.0	%REC		70-130		SW8260B	09/26/11 22:01 / jrj
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	09/26/11 22:01 / jrj
Surr: p-Bromofluorobenzene	105	%REC		76-127		SW8260B	09/26/11 22:01 / jrj
Surr: Toluene-d8	110	%REC		79-122		SW8260B	09/26/11 22:01 / jrj

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-033
Client Sample ID Trip Blank, TB090111B-TS SHP0255, #3

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 10:05
DateReceived: 09/26/11
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/27/11 00:21 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/27/11 00:21 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/27/11 00:21 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/27/11 00:21 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/27/11 00:21 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/27/11 00:21 / jrj
Surr: 1,2-Dichloroethane-d4	96.0	%REC		70-130		SW8260B	09/27/11 00:21 / jrj
Surr: Dibromofluoromethane	100	%REC		77-126		SW8260B	09/27/11 00:21 / jrj
Surr: p-Bromofluorobenzene	102	%REC		76-127		SW8260B	09/27/11 00:21 / jrj
Surr: Toluene-d8	111	%REC		79-122		SW8260B	09/27/11 00:21 / jrj

Report
Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc
Project: Biere 1-22 Well Site Project
Lab ID: B11092278-034
Client Sample ID Trip Blank, TB090111B-TS SHP0255, #4

Revised Date: 10/17/11
Report Date: 10/12/11
Collection Date: 09/22/11 10:05
DateReceived: 09/26/11
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/27/11 00:49 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/27/11 00:49 / jrj
Toluene	ND	ug/L		1.0		SW8260B	09/27/11 00:49 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/27/11 00:49 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	09/27/11 00:49 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/27/11 00:49 / jrj
Surr: 1,2-Dichloroethane-d4	98.0	%REC		70-130		SW8260B	09/27/11 00:49 / jrj
Surr: Dibromofluoromethane	101	%REC		77-126		SW8260B	09/27/11 00:49 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	09/27/11 00:49 / jrj
Surr: Toluene-d8	111	%REC		79-122		SW8260B	09/27/11 00:49 / jrj

Report
Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 10/10/11

Project: Biere 1-22 Well Site Project

Work Order: B11092278

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C										Batch: 110927A
Sample ID: MBLK2		Method Blank					Run: BAL #11_110927A			09/27/11 13:33
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS2		Laboratory Control Sample					Run: BAL #11_110927A			09/27/11 13:35
Solids, Total Dissolved TDS @ 180 C		1650	mg/L	10	99	90	110			
Sample ID: B11092141-008A MS		Sample Matrix Spike					Run: BAL #11_110927A			09/27/11 13:40
Solids, Total Dissolved TDS @ 180 C		2120	mg/L	10	94	90	110			
Sample ID: B11092141-002A DUP		Sample Duplicate					Run: BAL #11_110927A			09/27/11 13:44
Solids, Total Dissolved TDS @ 180 C		14300	mg/L	10		90	110	0.1	5	
Sample ID: B11092278-003A DUP		Sample Duplicate					Run: BAL #11_110927A			09/27/11 14:00
Solids, Total Dissolved TDS @ 180 C		29200	mg/L	10		90	110	3.0	5	
Sample ID: MBLK3		Method Blank					Run: BAL #11_110927A			09/27/11 16:40
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS3		Laboratory Control Sample					Run: BAL #11_110927A			09/27/11 16:43
Solids, Total Dissolved TDS @ 180 C		1680	mg/L	10	101	90	110			
Sample ID: B11091832-001A MS		Sample Matrix Spike					Run: BAL #11_110927A			09/27/11 16:48
Solids, Total Dissolved TDS @ 180 C		1860	mg/L	10	96	90	110			
Sample ID: B11091233-002A DUP		Sample Duplicate					Run: BAL #11_110927A			09/27/11 16:50
Solids, Total Dissolved TDS @ 180 C		12500	mg/L	10		90	110	0.2	5	
Sample ID: B11092056-001A DUP		Sample Duplicate					Run: BAL #11_110927A			09/27/11 17:15
Solids, Total Dissolved TDS @ 180 C		143	mg/L	10		90	110	1.1	5	
Sample ID: MBLK4		Method Blank					Run: BAL #11_110927A			09/27/11 17:55
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS4		Laboratory Control Sample					Run: BAL #11_110927A			09/27/11 17:57
Solids, Total Dissolved TDS @ 180 C		1680	mg/L	10	101	90	110			
Sample ID: B11092305-001A MS		Sample Matrix Spike					Run: BAL #11_110927A			09/27/11 18:04
Solids, Total Dissolved TDS @ 180 C		1860	mg/L	10	98	90	110			
Sample ID: B11092278-020A DUP		Sample Duplicate					Run: BAL #11_110927A			09/27/11 18:05
Solids, Total Dissolved TDS @ 180 C		52700	mg/L	10		90	110	0.2	5	
Sample ID: B11092278-019A DUP		Sample Duplicate					Run: BAL #11_110927A			09/27/11 18:20
Solids, Total Dissolved TDS @ 180 C		3660	mg/L	10		90	110	0.2	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 10/10/11

Project: Biere 1-22 Well Site Project

Work Order: B11092278

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A								Batch: G_TPH110929A		
Sample ID: G11090747-005AMS	Sample Matrix Spike					Run: SUB-G189124			09/29/11 15:09	
Total Petroleum Hydrocarbons	19	mg/L	5.0	85	64	132				
Sample ID: MBLK1109290000	Method Blank					Run: SUB-G189124			09/29/11 12:32	
Total Petroleum Hydrocarbons	ND	mg/L	0.6							
Sample ID: LCS1109290000	Laboratory Control Sample					Run: SUB-G189124			09/29/11 12:33	
Total Petroleum Hydrocarbons	16	mg/L	5.0	78	64	132				
Sample ID: LCSD1109290000	Laboratory Control Sample Duplicate					Run: SUB-G189124			09/29/11 12:35	
Total Petroleum Hydrocarbons	16	mg/L	5.0	79	64	132	0.6	34		
Sample ID: G11090768-001EMS	Sample Matrix Spike					Run: SUB-G189124			09/29/11 14:36	
Total Petroleum Hydrocarbons	18	mg/L	5.0	88	64	132				
Method: E1664A								Batch: G_TPH111005A		
Sample ID: G11090780-027CMS	Sample Matrix Spike					Run: SUB-G189287			10/05/11 17:13	
Total Petroleum Hydrocarbons	18	mg/L	5.0	80	64	132				
Sample ID: MBLK1110050741	Method Blank					Run: SUB-G189287			10/05/11 16:36	
Total Petroleum Hydrocarbons	ND	mg/L	0.6							
Sample ID: LCS1110050741	Laboratory Control Sample					Run: SUB-G189287			10/05/11 16:38	
Total Petroleum Hydrocarbons	17	mg/L	5.0	84	64	132				
Sample ID: LCSD1110050741	Laboratory Control Sample Duplicate					Run: SUB-G189287			10/05/11 16:39	
Total Petroleum Hydrocarbons	17	mg/L	5.0	83	64	132	0.6	34		
Sample ID: G11090809-003EMS	Sample Matrix Spike					Run: SUB-G189287			10/05/11 16:53	
Total Petroleum Hydrocarbons	18	mg/L	5.0	85	64	132				

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 10/10/11

Project: Biere 1-22 Well Site Project

Work Order: B11092278

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: IC202-B_110927A		
Sample ID: ICV092711-11	Initial Calibration Verification Standard									09/27/11 10:13
Chloride		24.2	mg/L	1.0	97	90	110			
Method: E300.0								Batch: R173245		
Sample ID: ICB092711-12	Method Blank				Run: IC202-B_110927A				09/27/11 10:23	
Chloride		0.04	mg/L	0.01						
Sample ID: LFB092711-13	Laboratory Fortified Blank				Run: IC202-B_110927A				09/27/11 10:33	
Chloride		24.0	mg/L	1.0	96	90	110			
Sample ID: B11092116-003AMS	Sample Matrix Spike				Run: IC202-B_110927A				09/27/11 11:23	
Chloride		253	mg/L	2.6	99	90	110			
Sample ID: B11092116-003AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_110927A				09/27/11 11:34	
Chloride		251	mg/L	2.6	99	90	110	0.5	20	
Sample ID: B11092278-018AMS	Sample Matrix Spike				Run: IC202-B_110927A				09/27/11 13:15	
Chloride		15800	mg/L	53	99	90	110			
Sample ID: B11092278-018AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_110927A				09/27/11 13:25	
Chloride		15800	mg/L	53	98	90	110	0.1	20	
Sample ID: B11092278-030AMS	Sample Matrix Spike				Run: IC202-B_110927A				09/27/11 15:37	
Chloride		2060	mg/L	5.3	92	90	110			
Sample ID: B11092278-030AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_110927A				09/27/11 15:47	
Chloride		2070	mg/L	5.3	94	90	110	0.2	20	
Method: E300.0								Analytical Run: IC202-B_110928A		
Sample ID: ICV092811-11	Initial Calibration Verification Standard									09/28/11 10:08
Chloride		24.0	mg/L	1.0	96	90	110			
Method: E300.0								Batch: R173336		
Sample ID: ICB092811-12	Method Blank				Run: IC202-B_110928A				09/28/11 10:18	
Chloride		0.10	mg/L	0.01						
Sample ID: LFB092811-13	Laboratory Fortified Blank				Run: IC202-B_110928A				09/28/11 10:28	
Chloride		23.7	mg/L	1.0	94	90	110			
Sample ID: B11092025-002AMS	Sample Matrix Spike				Run: IC202-B_110928A				09/28/11 11:59	
Chloride		246	mg/L	2.6	98	90	110			
Sample ID: B11092025-002AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_110928A				09/28/11 12:09	
Chloride		245	mg/L	2.6	98	90	110	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 10/10/11

Project: Biere 1-22 Well Site Project

Work Order: B11092278

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: IC203-B_110926A		
Sample ID: ICV092611-11	Initial Calibration Verification Standard									09/26/11 13:14
Chloride		24.4	mg/L	1.0	98	90	110			
Method: E300.0								Batch: R173177		
Sample ID: ICB092611-12	Method Blank					Run: IC203-B_110926A			09/26/11 13:25	
Chloride		ND	mg/L	0.05						
Sample ID: LFB092611-13	Laboratory Fortified Blank					Run: IC203-B_110926A			09/26/11 13:37	
Chloride		24.5	mg/L	1.0	98	90	110			
Sample ID: B11092212-001AMS	Sample Matrix Spike					Run: IC203-B_110926A			09/27/11 00:40	
Chloride		37.5	mg/L	1.0	110	90	110			
Sample ID: B11092212-001AMSD	Sample Matrix Spike Duplicate					Run: IC203-B_110926A			09/27/11 00:52	
Chloride		37.7	mg/L	1.0	111	90	110	0.6	20	S
Sample ID: B11092278-012AMS	Sample Matrix Spike					Run: IC203-B_110926A			09/27/11 03:23	
Chloride		18500	mg/L	53	94	90	110			
Sample ID: B11092278-012AMSD	Sample Matrix Spike Duplicate					Run: IC203-B_110926A			09/27/11 03:34	
Chloride		18500	mg/L	53	94	90	110	0.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Project: Biere 1-22 Well Site Project

Revised Date: 10/17/11

Report Date: 10/12/11

Work Order: B11092278

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: IC202-B_111014A		
Sample ID: ICV101411-11	Initial Calibration Verification Standard									10/14/11 11:44
Chloride		24.1	mg/L	1.0	96	90	110			
Method: E300.0								Batch: R174204		
Sample ID: ICB101411-12	Method Blank					Run: IC202-B_111014A			10/14/11 11:54	
Chloride		0.06	mg/L	0.01						
Sample ID: LFB101411-13	Laboratory Fortified Blank					Run: IC202-B_111014A			10/14/11 12:04	
Chloride		24.4	mg/L	1.0	97	90	110			
Sample ID: B11092278-021AMS	Sample Matrix Spike					Run: IC202-B_111014A			10/14/11 12:24	
Chloride		16500	mg/L	53	103	90	110			
Sample ID: B11092278-021AMSD	Sample Matrix Spike Duplicate					Run: IC202-B_111014A			10/14/11 12:34	
Chloride		16500	mg/L	53	102	90	110	0.1	20	
Sample ID: B11100532-005AMS	Sample Matrix Spike					Run: IC202-B_111014A			10/14/11 13:15	
Chloride		1640	mg/L	13	107	90	110			
Sample ID: B11100532-005AMSD	Sample Matrix Spike Duplicate					Run: IC202-B_111014A			10/14/11 13:25	
Chloride		1650	mg/L	13	108	90	110	0.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 10/11/11

Project: Biere 1-22 Well Site Project

Work Order: B11092278

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R173146
Sample ID: LCS092611	9	Laboratory Control Sample				Run: 5971A.I_110926A				09/26/11 13:29
Benzene		4.84	ug/L	1.0	97	71	133			
Ethylbenzene		5.00	ug/L	1.0	100	78	131			
Toluene		4.96	ug/L	1.0	99	78	134			
m+p-Xylenes		9.76	ug/L	1.0	98	78	133			
o-Xylene		4.96	ug/L	1.0	99	79	136			
Surr: 1,2-Dichloroethane-d4				1.0	97	70	130			
Surr: Dibromofluoromethane				1.0	99	77	126			
Surr: p-Bromofluorobenzene				1.0	101	76	127			
Surr: Toluene-d8				1.0	108	79	122			
Sample ID: BLK092611	10	Method Blank				Run: 5971A.I_110926A				09/26/11 13:58
Benzene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	97	70	130			
Surr: Dibromofluoromethane				1.0	100	77	126			
Surr: p-Bromofluorobenzene				1.0	102	76	127			
Surr: Toluene-d8				1.0	110	79	122			
Sample ID: b11092278-002ams	9	Sample Matrix Spike				Run: 5971A.I_110926B				09/27/11 01:17
Benzene		5.24	ug/L	1.0	96	71	133			
Ethylbenzene		7.60	ug/L	1.0	102	78	131			
Toluene		5.08	ug/L	1.0	102	78	134			
m+p-Xylenes		11.1	ug/L	1.0	100	78	133			
o-Xylene		5.08	ug/L	1.0	98	79	136			
Surr: 1,2-Dichloroethane-d4				1.0	103	70	130			
Surr: Dibromofluoromethane				1.0	102	77	126			
Surr: p-Bromofluorobenzene				1.0	105	76	127			
Surr: Toluene-d8				1.0	108	79	122			
Sample ID: b11092278-002amsd	9	Sample Matrix Spike Duplicate				Run: 5971A.I_110926B				09/27/11 01:46
Benzene		4.96	ug/L	1.0	90	71	133	5.5	20	
Ethylbenzene		6.72	ug/L	1.0	84	78	131	12	20	
Toluene		4.72	ug/L	1.0	94	78	134	7.3	20	
m+p-Xylenes		10.3	ug/L	1.0	91	78	133	7.9	20	
o-Xylene		4.84	ug/L	1.0	93	79	136	4.8	20	
Surr: 1,2-Dichloroethane-d4				1.0	102	70	130			
Surr: Dibromofluoromethane				1.0	102	77	126			
Surr: p-Bromofluorobenzene				1.0	104	76	127			
Surr: Toluene-d8				1.0	111	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Daniel B Stephens and Associates Inc

Report Date: 10/11/11

Project: Biere 1-22 Well Site Project

Work Order: B11092278

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R173178
Sample ID: lcsA092611	9	Laboratory Control Sample				Run: 5971A.I_110926B				09/26/11 23:25
Benzene		4.64	ug/L	1.0	93	71	133			
Ethylbenzene		5.08	ug/L	1.0	102	78	131			
Toluene		5.16	ug/L	1.0	103	78	134			
m+p-Xylenes		10.2	ug/L	1.0	102	78	133			
o-Xylene		5.12	ug/L	1.0	102	79	136			
Surr: 1,2-Dichloroethane-d4				1.0	96	70	130			
Surr: Dibromofluoromethane				1.0	100	77	126			
Surr: p-Bromofluorobenzene				1.0	101	76	127			
Surr: Toluene-d8				1.0	113	79	122			
Sample ID: blkA092611	10	Method Blank				Run: 5971A.I_110926B				09/26/11 23:53
Benzene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	99	70	130			
Surr: Dibromofluoromethane				1.0	99	77	126			
Surr: p-Bromofluorobenzene				1.0	104	76	127			
Surr: Toluene-d8				1.0	112	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



Daniel B Stephens and Associates Inc

B11092278

Login completed by: Randa Nees

Date Received: 9/26/2011

Reviewed by: BL2000\kmcDonald

Received by: rln

Reviewed Date: 9/26/2011

Carrier Hand Del
name:

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☒ No ☐ Not Present ☐

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) Yes ☒ No ☐

Container/Temp Blank temperature: 3.6°C On Ice

Water - VOA vials have zero headspace? Yes ☒ No ☐ No VOA vials submitted ☐

Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Contact and Corrective Action Comments:

None

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT- Provide as much information as possible.

Company Name: Daniel B. Stephens & Associates (DBS&A)	Project Name, PWS, Permit, Etc. Biere 1-22 Well Site Project	Sample Origin State: MT	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: DBS&A 12081 W. Alameda Pkwy, PMB 136 Lakewood, CO 80228-2701	Contact Name: Christa Tyrrell	Phone/Fax: 406-209-1905	Email: ctyrrell@dbstephens.com
Invoice Address: DBS&A 6020 Academy Rd NE, Ste 100, Albuquerque, NM 87109	Invoice Contact & Phone: Rita Gurule, DBS&A, 6020 Academy Rd NE, St 100 Albuquerque, NM 87109 tel: 505-353-9014	Purchase Order:	Quote/Bottle Order: 52590 & 52167

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> DW | <input type="checkbox"/> A2LA |
| <input type="checkbox"/> GSA | <input type="checkbox"/> EDD/EDT (Electronic Data) |
| <input type="checkbox"/> POTW/WWTP | Format: _____ |
| <input type="checkbox"/> State: _____ | <input type="checkbox"/> LEVEL IV |
| <input type="checkbox"/> Other: _____ | <input type="checkbox"/> NELAC |

Number of Containers Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other	ANALYSIS REQUESTED										SEE ATTACHED	Normal Turnaround (TAT)	R U S H	Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page	shipped by: <u>Hand</u> Cooler (X's): Receipt Temp: <u>3.6</u> °C On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal Intact: <u>Y</u> Signature Match: <u>Y</u>
	TDS (A2540 C), CI (E300.0)	VOC-BTEX, TPH (SW8260B)													
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX												
1 PNR-RW-11	9/23/11	11:13	W	✓	✓							✓		*SOME SAMPLES	LABORATORY USE ONLY
2 PNR-RW-9	9/23/11	11:30	W	✓	✓							✓	FOR SAME WELL	002	
3 PNR-RW-1	9/22/11	10:05	W	✓	✓							✓	COLLECTED DIFF.	003	
4 "	9/23/11	10:15	W		✓							✓	DATE/TIMES.	004	
5 MOC-4	9/23/11	12:13	W	✓									(TPH BOTTLES)	005	
6 PNR-3A-07	9/22/11	14:46	W	✓										006	
7 MOC-20A	9/23/11	10:37	W	✓										007	
8															
9															
10															

Custody Record MUST be Signed	Relinquished by (print): C. Tyrrell	Date/Time: 9/23/11	Signature: <i>[Signature]</i>	Received by (print): DROPPED OFF @ ENERGY LAB	Date/Time: 9/23/11	Signature: <i>[Signature]</i>
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal:	Return to Client:	Lab Disposal:	Received by Laboratory: ANDANES	Date/Time: 09/26/11 @ 0730	Signature: <i>[Signature]</i>

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT - Provide as much information as possible.

Company Name: Daniel B. Stephens & Associates (DBS&A)	Project Name, PWS, Permit, Etc. Biere 1-22 Well Site Project	Sample Origin State: MT	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: DBS&A 12081 W. Alameda Pkwy, PMB 136 Lakewood, CO 80228-2701	Contact Name: Christa Tyrrell	Phone/Fax: 406-209-1905	Email: ctyrrell@dbstephens.com
Invoice Address: DBS&A 6020 Academy Rd NE, Ste 100, Albuquerque, NM 87109	Invoice Contact & Phone: Rita Gurule, DBS&A, 6020 Academy Rd NE, St 100 Albuquerque, NM 87109 tel: 505-353-9014	Purchase Order:	Quote/Bottle Order: 52590 & 52187

Special Report/Formats - ELI must be notified prior to sample submittal for the following:

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> DW | <input type="checkbox"/> A2LA |
| <input type="checkbox"/> GSA | <input type="checkbox"/> EDD/EDT (Electronic Data) |
| <input type="checkbox"/> POTW/WWTP | Format: _____ |
| <input type="checkbox"/> State: _____ | <input type="checkbox"/> LEVEL IV |
| <input type="checkbox"/> Other: _____ | <input type="checkbox"/> NELAC |

Number of Containers Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other	ANALYSIS REQUESTED										SEE ATTACHED	Normal Turnaround (TAT)	R U S H	Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page	Shipped by: <u>FWA</u> Cooler ID(s): _____	
	TDS (A2540 C), CI (E300.0)	VOC-BTEX, TPH (SW8260B)												Comments:	Receipt Temp: <u>3.6</u> °C On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal Intact: <u>Y</u> Signature Match: <u>Y</u>	
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX													
1 PNR-RW-12	9/22/11	13:45	W	✓	✓								✓			
2 "	9/23/11	11:53	W	✓	✓								✓			
3 PNR-RW-5	9/22/11	11:35	W	✓	✓								✓			
4 "	9/23/11	10:40	W	✓	✓								✓			
5 PNR-RW-6	9/22/11	13:30	W	✓	✓								✓	1/2 TPH contains submitted - to		
6																
7																
8																
9																
10																

Custody Record MUST be Signed	Relinquished by (print): C. Tyrrell	Date/Time: 9/21/11 12:59	Signature: <i>[Signature]</i>	Received by (print): DROPPED OFF @ ENERGY LAB	Date/Time: 9/21/11 07:30	Signature: <i>[Signature]</i>
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal: Return to Client:	Lab Disposal:		Received by Laboratory:	Date/Time:	Signature:

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Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT - Provide as much information as possible.

Company Name: Daniel B. Stephens & Associates (DBS&A)	Project Name, PWS, Permit, Etc. Biere 1-22 Well Site Project	Sample Origin State: MT	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: DBS&A 12081 W. Alameda Pkwy, PMB 136 Lakewood, CO 80228-2701	Contact Name: Christa Tyrrell	Phone/Fax: 406-209-1905	Email: ctyrrell@dbstephens.com
Invoice Address: DBS&A 6020 Academy Rd NE, Ste 100, Albuquerque, NM 87109	Invoice Contact & Phone: Rita Gurule, DBS&A, 6020 Academy Rd NE, St 100 Albuquerque, NM 87109 tel: 505-353-9014	Purchase Order:	Quote/Bottle Order: 52590 & 52167

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> DW | <input type="checkbox"/> A2LA |
| <input type="checkbox"/> GSA | <input type="checkbox"/> EDD/EDT (Electronic Data) |
| <input type="checkbox"/> POTW/WWTP | Format: _____ |
| <input type="checkbox"/> State: _____ | <input type="checkbox"/> LEVEL IV |
| <input type="checkbox"/> Other: _____ | <input type="checkbox"/> NELAC |

ANALYSIS REQUESTED				SEE ATTACHED	Normal Turnaround (TAT)	R U S H	Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page	Comments:	Receipt Temp <u>3.6</u> °C On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal Intact <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N
Number of Containers Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other	TDS (A2540 C), CI (E300.0)	VOC-BTEX, TPH (SW8260B)							
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX						
1 PNR-7-DUP	9/23/11	9:46	W	✓	✓				
2 PNR-7	9/23/11	9:46	W	✓	✓				
3 PNR-RW-2	9/22/11	10:25	W	✓	✓				
4	9/23/11	10:20	W		✓				
5 PNR-8	9/23/11	11:13	W	✓					
6 USGS93-3	9/22/11	16:38	W	✓					
7 PNR-22	9/22/11	10:55	W	✓					
8									
9									
10									

Custody Record MUST be Signed

Relinquished by (print): C. Tyrrell	Date/Time: 9/23/11	Signature: 	Received by (print): DROPPED OFF @ ENERGY LAB	Date/Time: 9/23/11 @ 0730	Signature:
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Sample Disposal: Return to Client:	Lab Disposal:		Received by Laboratory:	Date/Time:	Signature:

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Chain of Custody and Analytical Request Record

 Page 1 of 1

PLEASE PRINT - Provide as much information as possible.

Company Name: Daniel B. Stephens & Associates (DBS&A)	Project Name, PWS, Permit, Etc. Blere 1-22 Well Site Project	Sample Origin State: MT	EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: DBS&A 12081 W. Alameda Pkwy, PMB 136 Lakewood, CO 80228-2701	Contact Name: Christa Tyrrell	Phone/Fax: 406-209-1905	Email: ctyrrell@dbstephens.com
Invoice Address: DBS&A 6020 Academy Rd NE, Ste 100, Albuquerque, NM 87109	Invoice Contact & Phone: Rita Gurule, DBS&A, 6020 Academy Rd NE, St 100 Albuquerque, NM 87109 tel: 505-353-9014	Purchase Order:	Quote/Bottle Order: 52590 & 52167

Special Report/Formats - ELI must be notified prior to sample submittal for the following:

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> DW | <input type="checkbox"/> A2LA |
| <input type="checkbox"/> GSA | <input type="checkbox"/> EDD/EDT (Electronic Data) |
| <input type="checkbox"/> POTW/WWTP | Format: _____ |
| <input type="checkbox"/> State: _____ | <input type="checkbox"/> LEVEL IV |
| <input type="checkbox"/> Other: _____ | <input type="checkbox"/> NELAC |

 Number of Containers
 Sample Type: A W S V B O
 Air Water Soils/Solids
 Vegetation Bioassay Other

ANALYSIS REQUESTED

SEE ATTACHED

Normal Turnaround (TAT)

**R
U
S
H**

Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page

Comments:

 Shipped by: UPS or
 Cooler (Lbs):

 Receipt Temp
3.6 °C

 On Ice:
☒ Yes ☐ No

 Custody Seal Intact
 Signature Match

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	TDS (A2540 C), CI (E300.0)	VOC-BTEX, TPH (SW8260B)															
1 M-31	9/22/11	13:47	W	✓	✓															
2 PNR-RW-4	9/22/11	11:20	W	✓	✓															
3 "	9/23/11	10:35	W	✓	✓															
4 PNR-RW-3	9/22/11	10:40	W	✓	✓															
5 "	9/23/11	10:27	W	✓	✓															
6																				
7																				
8																				
9																				
10																				

 LABORATORY USE ONLY
 1102278-020
 021
 022
 023
 024

Custody Record MUST be Signed	Relinquished by (print): C. Tyrrell	Date/Time: 9/23/11 1302	Signature: <i>[Signature]</i>	Received by (print): DROPPED OFF @ ENERGY LABS	Date/Time: 9/23/11 0730	Signature: <i>[Signature]</i>
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal:	Return to Client:	Lab Disposal:	Received by Laboratory:	Date/Time:	Signature:

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Chain of Custody and Analytical Request Record

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| <input type="checkbox"/> Other: _____ | <input type="checkbox"/> NELAC |

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Custody Record MUST be Signed	Relinquished by (print): C. Tyrrell	Date/Time: 9/23/11 12:54	Signature: 	Received by (print): DROPPED OFF AT ENERGY LAB	Date/Time: 9/23/11 07:30	Signature:
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
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ANALYTICAL SUMMARY REPORT

January 09, 2012

Catena Consulting LLC
1101 Strawberry Ave
Billings, MT 59105-1969

Workorder No.: B11122295

Project Name: Biere #1-22 Pioneer

Energy Laboratories Inc Billings MT received the following 2 samples for Catena Consulting LLC on 12/29/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B11122295-001	PNR-RW8	12/28/11 14:30	12/29/11	Aqueous	Hydrocarbons, Total Petroleum Anions by Ion Chromatography Solids, Total Dissolved 8260-Volatile Organic Compounds-BTEX
B11122295-002	PNR-RW6	12/28/11 14:55	12/29/11	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



CLIENT: Catena Consulting LLC

Project: Biere #1-22 Pioneer

Sample Delivery Group: B11122295

Report Date: 01/09/12

CASE NARRATIVE

Tests associated with analyst identified as ELI-G were subcontracted to Energy Laboratories, 400 W Boxelder Rd, Gillette, WY, EPA Number WY00006.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Catena Consulting LLC
Project: Biere #1-22 Pioneer
Lab ID: B11122295-001
Client Sample ID PNR-RW8

Report Date: 01/09/12
Collection Date: 12/28/11 14:30
DateReceived: 12/29/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	19600	mg/L		10		A2540 C	12/30/11 16:51 / jlw
INORGANICS							
Chloride	11400	mg/L	D	50		E300.0	12/30/11 14:11 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	12/30/11 14:16 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	12/30/11 14:16 / jrj
Toluene	ND	ug/L		1.0		SW8260B	12/30/11 14:16 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	12/30/11 14:16 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	12/30/11 14:16 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	12/30/11 14:16 / jrj
Surr: 1,2-Dichloroethane-d4	111	%REC		70-130		SW8260B	12/30/11 14:16 / jrj
Surr: Dibromofluoromethane	107	%REC		77-126		SW8260B	12/30/11 14:16 / jrj
Surr: p-Bromofluorobenzene	106	%REC		76-127		SW8260B	12/30/11 14:16 / jrj
Surr: Toluene-d8	107	%REC		79-122		SW8260B	12/30/11 14:16 / jrj
- The sample was received in the laboratory with a pH > 2. The pH was 7.							
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	01/03/12 11:24 / eli-g

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Catena Consulting LLC
Project: Biere #1-22 Pioneer
Lab ID: B11122295-002
Client Sample ID PNR-RW6

Report Date: 01/09/12
Collection Date: 12/28/11 14:55
DateReceived: 12/29/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	20000	mg/L		10		A2540 C	12/30/11 16:53 / jlw
INORGANICS							
Chloride	11700	mg/L	D	50		E300.0	12/30/11 14:21 / kh
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	12/30/11 13:49 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	12/30/11 13:49 / jrj
Toluene	ND	ug/L		1.0		SW8260B	12/30/11 13:49 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	12/30/11 13:49 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	12/30/11 13:49 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	12/30/11 13:49 / jrj
Surr: 1,2-Dichloroethane-d4	113	%REC		70-130		SW8260B	12/30/11 13:49 / jrj
Surr: Dibromofluoromethane	108	%REC		77-126		SW8260B	12/30/11 13:49 / jrj
Surr: p-Bromofluorobenzene	110	%REC		76-127		SW8260B	12/30/11 13:49 / jrj
Surr: Toluene-d8	106	%REC		79-122		SW8260B	12/30/11 13:49 / jrj
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		1		E1664A	01/03/12 11:47 / eli-g

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Catena Consulting LLC

Report Date: 01/09/12

Project: Biere #1-22 Pioneer

Work Order: B11122295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C								Batch: TDS111230A		
Sample ID: MBLK1	Method Blank					Run: BAL #11_111230A			12/30/11 16:10	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS1	Laboratory Control Sample					Run: BAL #11_111230A			12/30/11 16:12	
Solids, Total Dissolved TDS @ 180 C		1700	mg/L	10	102	90	110			
Sample ID: B11122252-001A MS	Sample Matrix Spike					Run: BAL #11_111230A			12/30/11 16:21	
Solids, Total Dissolved TDS @ 180 C		2450	mg/L	10	91	90	110			
Sample ID: B11122286-002A DUP	Sample Duplicate					Run: BAL #11_111230A			12/30/11 16:49	
Solids, Total Dissolved TDS @ 180 C		285	mg/L	10		90	110	2.4	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Catena Consulting LLC

Report Date: 01/09/12

Project: Biere #1-22 Pioneer

Work Order: B11122295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A								Batch: G_TPH120103A		
Sample ID: MBLK1201030000	Method Blank					Run: SUB-G191252			01/03/12 11:02	
Total Petroleum Hydrocarbons		ND	mg/L	0.6						
Sample ID: LCS1201030000	Laboratory Control Sample					Run: SUB-G191252			01/03/12 11:07	
Total Petroleum Hydrocarbons		19	mg/L	5.0	95	64	132			
Sample ID: LCSD1201030000	Laboratory Control Sample Duplicate					Run: SUB-G191252			01/03/12 11:09	
Total Petroleum Hydrocarbons		17	mg/L	5.0	87	64	132	9.4	34	
Sample ID: G11120633-006AMS	Sample Matrix Spike					Run: SUB-G191252			01/03/12 11:15	
Total Petroleum Hydrocarbons		18	mg/L	5.0	87	64	132			

Qualifiers:

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Catena Consulting LLC

Report Date: 01/09/12

Project: Biere #1-22 Pioneer

Work Order: B11122295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: IC203-B_121230A		
Sample ID: ICV123011-11	Initial Calibration Verification Standard									12/30/11 12:20
Chloride		24.6	mg/L	1.0	98	90	110			
Method: E300.0								Batch: R178172		
Sample ID: ICB123011-12	Method Blank					Run: IC203-B_121230A			12/30/11 12:30	
Chloride		ND	mg/L	0.05						
Sample ID: LFB123011-13	Laboratory Fortified Blank					Run: IC203-B_121230A			12/30/11 12:40	
Chloride		25.2	mg/L	1.0	101	90	110			
Sample ID: B11122197-002BMS	Sample Matrix Spike					Run: IC203-B_121230A			12/30/11 13:00	
Chloride		29.5	mg/L	1.0	108	90	110			
Sample ID: B11122197-002BMSSD	Sample Matrix Spike Duplicate					Run: IC203-B_121230A			12/30/11 13:10	
Chloride		29.8	mg/L	1.0	109	90	110	1.1	20	
Sample ID: B11122302-001AMS	Sample Matrix Spike					Run: IC203-B_121230A			12/30/11 15:27	
Chloride		1230	mg/L	13	98	90	110			
Sample ID: B11122302-001AMSSD	Sample Matrix Spike Duplicate					Run: IC203-B_121230A			12/30/11 15:37	
Chloride		1240	mg/L	13	98	90	110	0.6	20	

Qualifiers:

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Catena Consulting LLC

Report Date: 01/06/12

Project: Biere #1-22 Pioneer

Work Order: B11122295

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B							Batch: R178131		
Sample ID: lcs123011	Laboratory Control Sample				Run: CS5972A.I_111230B			12/30/11 09:54	
Benzene	5.04	ug/L	1.0	101	71	133			
Ethylbenzene	4.84	ug/L	1.0	97	78	131			
Toluene	5.16	ug/L	1.0	103	78	134			
m+p-Xylenes	9.92	ug/L	1.0	99	78	133			
o-Xylene	5.00	ug/L	1.0	100	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	97	70	130			
Surr: Dibromofluoromethane			1.0	100	77	126			
Surr: p-Bromofluorobenzene			1.0	101	76	127			
Surr: Toluene-d8			1.0	113	79	122			
Sample ID: blk123011	Method Blank				Run: CS5972A.I_111230B			12/30/11 10:20	
Benzene	ND	ug/L	1.0						
Ethylbenzene	ND	ug/L	1.0						
Toluene	ND	ug/L	1.0						
m+p-Xylenes	ND	ug/L	1.0						
o-Xylene	ND	ug/L	1.0						
Xylenes, Total	ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4			1.0	102	70	130			
Surr: Dibromofluoromethane			1.0	105	77	126			
Surr: p-Bromofluorobenzene			1.0	112	76	127			
Surr: Toluene-d8			1.0	111	79	122			
Sample ID: b11122295-001bms	Sample Matrix Spike				Run: CS5972A.I_111230B			12/30/11 19:29	
Benzene	4.80	ug/L	1.0	96	71	133			
Ethylbenzene	4.68	ug/L	1.0	94	78	131			
Toluene	5.04	ug/L	1.0	101	78	134			
m+p-Xylenes	9.76	ug/L	1.0	98	78	133			
o-Xylene	4.84	ug/L	1.0	97	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	102	70	130			
Surr: Dibromofluoromethane			1.0	101	77	126			
Surr: p-Bromofluorobenzene			1.0	109	76	127			
Surr: Toluene-d8			1.0	109	79	122			
Sample ID: b11122295-001bmsd	Sample Matrix Spike Duplicate				Run: CS5972A.I_111230B			12/30/11 19:55	
Benzene	5.28	ug/L	1.0	106	71	133	9.5	20	
Ethylbenzene	4.84	ug/L	1.0	97	78	131	3.4	20	
Toluene	5.08	ug/L	1.0	102	78	134	0.8	20	
m+p-Xylenes	9.76	ug/L	1.0	98	78	133	0.0	20	
o-Xylene	5.24	ug/L	1.0	105	79	136	7.9	20	
Surr: 1,2-Dichloroethane-d4			1.0	107	70	130			
Surr: Dibromofluoromethane			1.0	104	77	126			
Surr: p-Bromofluorobenzene			1.0	104	76	127			
Surr: Toluene-d8			1.0	109	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



B11122295

Login completed by: Leslie S. Cadreau

Date Received: 12/29/2011

Reviewed by: BL2000\jlortz

Received by: jlh

Reviewed Date: 12/29/2011

Carrier Return-UPS
name: Ground

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature:	1.2°C On Ice		
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Contact and Corrective Action Comments:

None

PLEASE PRINT (Provide as much information as possible.)

Company Name: Catena Consulting LLC			Project Name, PWS, Permit, Etc. Biere #1-22 Pioneer			Sample Origin State: MT		EPA/State Compliance: Yes <input type="checkbox"/> No <input type="checkbox"/>					
Report Mail Address:			Contact Name: Cook Murch		Phone/Fax: 406.650.2297		Email: cmurch@catenaconsulting.com		Sampler: (Please Print) Cook Murch				
Invoice Address: 1101 Strawberry Ave Billings, MT 59105			Invoice Contact & Phone: Judd Stark 406 545 3075			Purchase Order:		Quote/Bottle Order: 52833					
Special Report/Formats: <input type="checkbox"/> DW <input type="checkbox"/> EDD/EDT (Electronic Data) <input type="checkbox"/> POTWWWWTP Format: _____ <input type="checkbox"/> State: _____ <input type="checkbox"/> Other: _____ <input type="checkbox"/> LEVEL IV <input type="checkbox"/> NELAC				ANALYSIS REQUESTED Number of Containers: _____ Sample Type: <input type="checkbox"/> A W <input type="checkbox"/> S V <input type="checkbox"/> B O <input type="checkbox"/> DW <input type="checkbox"/> Air Water Soils/Solids <input type="checkbox"/> Vegetation Bioassay <input type="checkbox"/> Other <input type="checkbox"/> DW - Drinking Water				SEE ATTACHED Standard Turnaround (TAT)		R U S H Contact ELI prior to RUSH sample submittal for charges and scheduling - See Instruction Page Comments:		Shipped by: RTH UPS Grd Cooler ID(s):	
												Receipt Temp 1.2 °C On Ice: <input checked="" type="radio"/> Y <input type="radio"/> N Custody Seal On Bottle: <input checked="" type="radio"/> Y <input type="radio"/> N On Cooler: <input checked="" type="radio"/> Y <input type="radio"/> N Intact Signature Match: <input checked="" type="radio"/> Y <input type="radio"/> N	
SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)		Collection Date	Collection Time	MATRIX	TDS	Chlorides	VOC - BTEX	TPH	LABORATORY USE ONLY				
1 PNR - RW 8		12/28/11	1430	W	X	X	X	X					
2 PNR - RW 6		↓	1455	↓	X	X	X	X					
3													
4													
5													
6													
7													
8													
9													
10													
Custody Record MUST be Signed		Relinquished by (print): Cook Murch		Date/Time: 12/28/11 17:00	Signature: Cook Murch		Received by (print): UPS		Date/Time: 12/28/11 1700	Signature:			
		Relinquished by (print):		Date/Time:	Signature:		Received by (print):		Date/Time:	Signature:			
		Sample Disposal: Return to Client: _____		Lab Disposal: X		Received by Laboratory: 12/29/11 9:05		Date/Time: 12/29/11 9:05		Signature: mcginty			

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.

This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

 Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

BOTTLE ORDER 52833


SHIPPED TO: Catena Consulting LLC

 Contact: Cook Murch
 405 B Street West
 Poplar MT 59255

Phone:

Project:

 Order Created by: Shari Endy
 Shipped From: Billings, MT
 Ship Date: 9/26/2011
 VIA: Ground

Bottle Size/Type	Bottles Per Samp	Method	Tests	Critical Hold Time	Preservative	Notes	Num of Samp
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(4 Sets)

1 Liter Plastic	1	A2540 C	Solids, Total Dissolved				1
		E300.0	Anions by Ion Chromatography				
40 mL Clear Glass VOA	3	SW8260B	8260-Volatile Organic Compounds-BTEX		<input checked="" type="checkbox"/> HCL	Zero headspace	1
1 Liter Clear Glass Narrow Mouth	2	E1664A	Hydrocarbons, Total Petroleum		<input type="checkbox"/> H2SO4		1

Trip Blank

40 mL Clear Glass VOA	1	FIELD	Supplies		<input checked="" type="checkbox"/> HCL	Do not open this container. Return with your samples to the lab. Zero headspace	1
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☒ HNO3 - Nitric Acid ☐ H2SO4 - Sulfuric Acid ☒ NaOH - Sodium Hydroxide
☒ ZnAc - Zinc Acetate ☒ HCl - Hydrochloric Acid ☐ H3PO4 - Phosphoric Acid

We strongly suggest that the samples are shipped the same day as they are collected.

Material Safety Data Sheets(MSDS) Available @ EnergyLab.com ->Services -> MSDS Sheets

Corrosive Chemicals: Nitric, Sulfuric, Phosphoric, Hydrochloric Acids and Sodium Hydroxide. Zinc Acetate is a skin irritant.

Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.